

# DAF CF DRIVER'S MANUAL

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**CF**

DRIVEN BY QUALITY

TRUCKS | PARTS | FINANCE

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**DAF**  
A PACCAR COMPANY

# ***CF Driver's Manual***



## PREFACE

This handbook consists of sections which describe the driving and care of the truck.

At the end of the handbook, there is a general alphabetical index, so that you can locate quickly what you are looking for.

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## WHY THIS HANDBOOK IS SO IMPORTANT!

This handbook contains the information which you, the driver, need for optimum efficiency, safety and comfort when operating this vehicle.

Besides giving instructions about operation and use, it also pays attention to maintenance and minor repairs which you may be able to carry out yourself.

For more serious problems, DAF has its own service organisation in Europe: International Truck Service (ITS). For drivers stranded abroad, the ITS switchboard in Eindhoven (the Netherlands) is only a phone call away. It is manned 24 hours a day, 365 days a year, to provide assistance to limit the downtime of the vehicle to a minimum.

To make use of the services of ITS (and to find out under which conditions ITS services are available), please see the European Service Network directory.



*NOTE: This handbook is based on the chassis with its fittings as it originally left the DAF factory.*

Depending upon the required body and equipment, the bodybuilder may have made fundamental changes to various parts or systems.

The vehicles covered by this handbook consist of various types and models. Individual vehicles are furthermore constructed in accordance with the legal regulations in the country concerned and according to the expected operating conditions. Certain descriptions or illustrations in this handbook may therefore not correspond fully to the situation on the vehicle. However, this has practically no influence on its operation or maintenance.

## Repairs

Repairs or maintenance jobs must be carried out by an experienced, properly trained mechanic. This mechanic is also qualified to perform the job in a responsible and safe manner.

### Important

Make sure that this handbook is in the vehicle at all times.

Read it carefully **before the first journey**, especially the **'Warnings and safety regulations', 'Instruments and controls', 'Inspections and maintenance'** and **'Driving'** sections.

The operating manual for the tachograph must have been handed over to you when this vehicle was delivered.

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## 1

### 1.1 WARNING SYMBOLS

Text accompanied by this warning symbol indicates:

- Risk of personal injury.



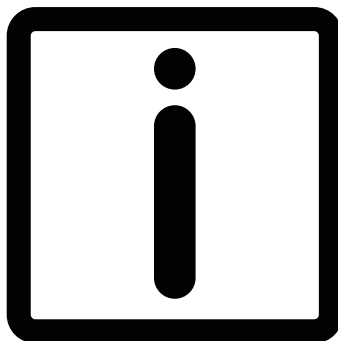
G000497

Text accompanied by this warning symbol indicates:

- Risk of material or functional damage.



G000496



G000987

Text accompanied by this warning symbol indicates:

- Extra attention is required or extra information is provided.

**Ignoring the safety instructions and warnings can put health and safety at risk. It can also lead to serious damage to material.**

## 1.2 BEFORE YOU START DRIVING

### Calibrating axle load monitoring system

If the vehicle is equipped with an axle load monitoring system, this system needs calibrating before you start driving the vehicle.

See chapter 'Air suspension' for the proper procedure.

## 1.3 WARNINGS AND SAFETY REGULATIONS



**WARNING!** *Not observing the following safety regulations can seriously jeopardise one's health and safety and can damage the vehicle and lead to hazardous situations.*

- *Always observe the safety instructions in this manual and do not ignore them.*
- *Also read the instructions and warnings on the labels and stickers on the various components of the vehicle and comply with them. They have been put there for your health and safety, so do not ignore them.*

### Modifications to the vehicle

Modifications to the vehicle or the vehicle configuration may require the reprogramming of electronic control units by an approved DAF Service dealer.

### Cabin

Make sure that there are no loose objects on the floor on the driver side. Loose objects may interfere with operating the pedals while driving, giving rise to extremely dangerous situations.

While driving a vehicle with a manually operated gearbox, do not use the clutch pedal as a foot rest since this may cause excessive wear of the clutch.

### Parking

Observe the following when parking on a slope, slippery surface, and so on.

1. Put wheel chocks in front of and behind the wheels of the driven axle.
2. Angle the wheels so that the vehicle does not move into the traffic stream if it is accidentally set in motion.

## **Safety belts**

Always use the safety belt (obligatory in some countries).

Vehicles that are equipped with an airbag always have safety belts with tensioner on both the driver seat and the co-driver seat. To guarantee proper operation of the airbag it is absolutely essential that the safety belts be used.

If the vehicle is equipped with VSC (Vehicle Stability Control) the vehicle may unexpectedly brake hard in certain situations; therefore always wear safety belts.

Safety belts only work properly when correctly tensioned. For that reason, never use a clip or other device to reduce the safety belt tension.

## **First aid kit**

Make sure that there is always a first aid kit in the vehicle (obligatory in some countries). Replace first aid items as soon as possible after use or expiration date to make the kit complete again.

## **Fire extinguisher**

Make sure that there is always a fire extinguisher in the vehicle (obligatory in some countries). Secure it well within the driver's reach and so it is also easily accessible for rescue workers and others providing assistance. Have the fire extinguisher checked for operational readiness each year. Have a used extinguisher refilled at the earliest opportunity.

### **If there is a fire:**

If there is a fire, certain plastic seals can produce gases which, together with water, form a corrosive acid. Therefore, do not touch any fire extinguisher fluid on the vehicle without protective gloves.

## **Hazard warning triangle**

Make sure that there is always a hazard warning triangle (obligatory in most countries) in the vehicle, possibly in combination with other marking equipment.

If a breakdown occurs en route, wear reflective clothing when outside the vehicle (obligatory in some countries).

## **Components**

Remain at a safe distance from rotating and/or moving components.

During regeneration remain at a safe distance from the exhaust and do not stand on the catwalk above the DPF as it can be extremely hot.

## **Tilting the cabin**

If a cooler box or refrigerator has been fitted in the cabin, switch it off and if necessary unplug it before tilting (depending on the type).

Leave the cooler box or refrigerator switched off for at least 30 minutes after the cabin has been tilted back.

Place wheel chocks in front of and behind the driven axle.

Make sure that all loose objects are removed from the cabin to prevent damage.

Tilt the cabin fully forward; in this way it cannot fall back accidentally.

Following a collision, only tilt the cabin in an **emergency situation**.

The tilting mechanism may be damaged.

(The end stop of the lift cylinder may not work.)

Always use stands to support the chassis when working under a vehicle which rests on a jack.

## Lighting

To replace lighting bulbs, the following conditions must be met:

- The lights are switched off.
- The ignition is switched off.
- De-energise the lighting system by removing the fuses for the lights.
- Let the lighting unit cool down before touching it. Risk of personal injury!

After replacing a light, have the headlight setting checked by a DAF Service dealer at the earliest opportunity.

## Engine

Exhaust gases contain carbon monoxide, an invisible, odourless, but highly toxic gas. Inhalation of these gases may cause unconsciousness and death.

Do not run the engine in an enclosed or unventilated area.

Make sure that exhaust gases are properly extracted.

A poorly maintained, damaged or corroded exhaust system can allow carbon monoxide to enter the cabin. Entry of carbon monoxide is also possible from other vehicles nearby. If the maintenance of the vehicle is poor, this may lead to carbon monoxide entering the cabin or sleeper, causing serious illness. Never idle the engine for prolonged periods of time. If you smell or sense exhaust fumes, investigate the cause of the fumes and correct it as soon as possible.

Never leave the engine idling without a driver present for too long. This can increase the risk of personal injury and/or vehicle damage. If the engine overheats, as indicated by the engine coolant temperature indicator, immediate action is required to correct the condition. Continued unattended operation of the engine, even for a short time, may result in serious engine damage or a fire.

## Cooling system filler cap

Do not remove the filler cap of the cooling system when the engine is at operating temperature. Do not loosen the filler cap of the cooling system when the cabin is tilted.

## EAS (Emission Aftertreatment System)

The vehicle complies with the current European emission legislation standard Euro 6.

To meet this stringent legislation, the engine has Exhaust Gas Recirculation (EGR), Selective Catalyst Reduction (SCR) with a urea (AdBlue) dosing system and a Diesel Particulate Filter (DPF). Combined, they are referred to as the Emission Aftertreatment System (EAS).

For this system to operate properly, it needs AdBlue and the DPF must be cleaned (regenerated) periodically.



*NOTE: The Diesel Particulate Filter (DPF) is, for example on the master display, also referred to as the soot filter.*

Due to legislative requirements, it may be a criminal offence to continue driving the vehicle when the exhaust gas emission is above legal limits.

To avoid malfunction and damage to the system, it is important to adhere to the following precautions:

- Refuel with diesel of the prescribed quality to prevent damage to the Emission Aftertreatment System. See section 'Diesel fuel' in chapter 'Technical data'.
- The vehicle informs the driver when the Diesel Particulate Filter (DPF), which is part of the Emission Aftertreatment System (EAS), needs maintenance. To prevent standstill, make sure to do so in time. See section 'Regenerating DPF' in chapter 'Driving'.
- Fill the AdBlue tank directly with AdBlue supplied by DAF or any other supplier (always from the original packaging). Use official AdBlue filling equipment. Filling up the AdBlue tank using a dedicated filler gun results in a maximum fill volume of 80%. See section 'Refuelling diesel and refilling AdBlue' in chapter 'Driving'.
- Always fill up the system with 100% clean AdBlue of the prescribed quality. See section 'AdBlue' in chapter 'Technical data'. Never use contaminated AdBlue or contaminated canisters or funnels to fill up the AdBlue tank.
- Avoid diesel mixing with AdBlue in the AdBlue tank: Always use 100% clean canisters and funnels that have not been used for any other liquids, such as diesel or petrol.

Legislation requires that, if a number of conditions are detected, an engine power derate eventually followed by a vehicle speed limit are applied.

When such a condition is detected, warnings appear on the master display of DIP-5. If the warnings are ignored, an engine power derate of 25% is applied after a certain amount of time.

Continuing to operate the vehicle in this condition eventually results in the vehicle speed being limited to 20 km/h. These conditions are:

- The AdBlue tank is filled with the wrong quality or contaminated AdBlue.
- AdBlue tank level is low or too low, or the tank is empty.
- Malfunctioning of the AdBlue system (for example, AdBlue dosing is interrupted or primary input signals for the system fail).
- Impeded EGR valve.



Engine power de-rate symbol.



*NOTE: Derate is activated at vehicle standstill or engine idle if the vehicle speed sensor has failed.*

When the malfunction that has occurred is eliminated, derate is deactivated and full engine power is available.  
Derate is deactivated at vehicle standstill or engine idle if the vehicle speed sensor has failed.



*NOTE: Emission levels can also rise above legal limits as a result of malfunctions in the engine and or EAS system. These also generate warnings on the master display of the DIP-5 and can activate engine power derates in excess of 25%.*

## Oils and lubricants

Various kinds of oil and other lubricants used on the vehicle may constitute a health hazard when they come into contact with the skin.

This also applies to engine coolant, windscreen washer fluid, refrigerant in air conditioning systems and diesel fuel.

So avoid direct contact as much as possible.

The engine and surrounding area must be free of flammable materials to avoid the risk of fire.

Exercise caution when changing hot oil; it can cause serious injury.

## Air conditioning system

The air conditioning system contains refrigerant under high pressure. Removal of any parts of the air conditioning system is not permitted. Only qualified personnel may perform activities on the air conditioning system. Contact a DAF Service dealer.

If the air conditioning fails, have it repaired by a DAF Service dealer as soon as possible to avoid further damage to the system.

## Load

Always secure the load well so that it cannot move, not even during an emergency stop. Remember that side walls, partitions, and so on are often not designed to withstand high forces.

Loads must not project more than the local regulations permit.

The load influences the stability of the vehicle, and a larger turning circle may be necessary.

When loading, make sure that the following values are not exceeded:



- 1**
- Maximum permissible gross combination weight (GCW).
  - Maximum permissible gross vehicle weight (GVW).
  - Maximum permissible axle load.

## **Coupling and uncoupling a semi-trailer**

Before coupling or uncoupling a semi-trailer to or from a vehicle with a lifting axle, the driver must lower the lifting axle. This prevents the lifting axle from dropping unexpectedly. If the axle pressure permits this, the axle can be raised after coupling the semi-trailer.

## **Trailer coupling**

Before every drive, check if the trailer coupling is locked properly and if the air hoses and electrical connection are connected properly.

## **Fifth wheel**

Before every drive, check if the fifth wheel is locked properly and if the air hoses and electrical connection are connected properly.

## **Loading and unloading a coupled semi-trailer**

Before loading or unloading a semi-trailer with a lifting axle, the driver must lower the lifting axle. This prevents the lifting axle from dropping unexpectedly. If the axle pressure permits this, the axle can be raised after coupling the semi-trailer.

## **Vehicle lock on a ferry, for example**

To lock the vehicle at the front, the towing eyes on both the left and right sides must be used.

Never use the leaves of the rear suspension to lock the vehicle at the rear.

## **Winter conditions**

During winter conditions pay special attention to the following items, amongst others.

- Make sure (especially in mountainous areas) that winter tyres or snow chains are installed on the vehicle.
- Before operating the windscreen wiper blades, check that the blades are not frozen to the windscreen, otherwise they could be damaged. To prevent the blades freezing to the windscreen, something can be placed between the blades and the windscreen.
- If the tank has been filled up with winter diesel, allow the auxiliary heater to run on the new fuel for half an hour. Make sure that all the old fuel is used up.
- When freezing, AdBlue expands more than plain water. If the vehicle is parked or stored for more than 48 hours under conditions of minus 20°C or more, it is advised not to fill the AdBlue reservoir to more than 75%. This is to avoid possible damage to the AdBlue reservoir, for example.

## Environment

Pollution constitutes a serious threat to the environment. To keep pollution to a minimum, DAF recommends the following rules:

- Do not dump used oil, fuel, lubricants, hydraulic fluid, AdBlue or coolants in drains, sewers, landfills or on the ground. This is illegal. Return these fluids to the designated authority or appropriate chemical waste collection company for recycling or destruction. Store these fluids separately.
- Make sure that the vehicle is serviced regularly according to the instructions and recommendations of DAF. A properly serviced vehicle helps to optimise fuel economy and reduce the level of harmful constituents in the exhaust gases.

## 1.4 AIRBAG SAFETY INSTRUCTIONS

Vehicles equipped with an airbag and safety belt tensioner system have a sticker with the airbag symbol on the windscreen. In addition, there is an identification 'AIRBAG' visible on the steering wheel. A vehicle equipped with an airbag also has an automatic safety belt tensioner.



### **WARNING!**

- ***Do not use equipment or objects using strong electromagnetic radiation in the vicinity of airbag/safety belt tensioner systems.***

***Such equipment or objects may cause this system to fail. In extreme cases, they may cause the system to be activated and can result in dangerous situations and injury.***

## Inspections

- The airbag and safety belt tensioner system only functions correctly if:
  - After switching on the ignition, the airbag warning symbol appears on the master display and disappears after approximately 5 to 10 seconds.
- The system does not function correctly if:
  - After the ignition is switched on, no airbag warning symbol appears on the master display.
  - After the ignition is switched on, the airbag warning symbol on the master display changes into an airbag warning after approximately 10 seconds.
  - The airbag warning appears on the master display when driving.
- If the system detects a fault, it is unable to activate the airbag and/or safety belt tensioners and there is no extra protection in the event of a collision. Have the fault remedied by an approved DAF Service dealer as soon as possible.

## Maintenance

- Clean the airbag cover with a dry or damp cloth only. If it is heavily fouled, ask a DAF Service dealer for a DAF approved cleaning agent.
- After a maximum of 15 years the main components of the airbag and safety belt tensioner system including the electronic control unit must be replaced by a DAF Service dealer.

1



## **WARNING!**

- ***Do not stick anything to the airbag cover.***
- ***Do not treat the cover with a cleaning agent, solvent, grease, paint, lacquer or other substance.***

***Applying objects to the airbag cover can damage the cover. This can lead to uncontrolled fragmenting of the cover during deployment of the airbag and can cause unnecessary injury.***

## **Operation**

- The airbag and safety belt tensioners are activated in the event of a (near) head-on collision when a specific vehicle deceleration is exceeded. The airbag and safety belt tensioners are not be activated when:
  - The ignition is switched off.
  - The vehicle is involved in a minor head-on collision.
  - The vehicle is involved in a lateral collision.
  - The vehicle is involved in a tail collision.
  - The vehicle overturns.
- The system only provides optimal protection when the safety belt is correctly worn and the seat, safety belt and steering wheel are well adjusted to the driver.



## **WARNING!**

- ***Do not rest any body part (torso, hand, head, foot) close to the airbag cover.***
- ***Hold the steering wheel by the outer rim as much as possible to allow unimpeded deployment of the airbag.***
- ***Keep the space between the driver and airbag free.***
- ***Nothing must be placed between the driver and the airbag, that is, no animals, no objects and no other persons.***

***Keeping body parts or other objects unnecessarily close to the airbag cover can cause unnecessary injuries in case the airbag is activated.***

## **Activation**

- If the airbag is activated in a collision, a white powder is released. This is in no way an indication of fire. The powder itself is not harmful.
- The airbag and safety belt tensioners can be activated only once. After activation of the system, have the parts replaced by a DAF Service dealer to provide the same protection.
- In the event of a minor collision not causing the airbag and safety belt tensioner system to be activated, it is still recommended to have the system checked by a DAF Service dealer.



***NOTE: The airbag fabric can cause slight injury because of the rapid movement of the airbag during activation. People wearing spectacles and persons smoking when driving run an increased risk of facial injury in a***

*collision involving deployment of the airbag. Usually the injuries are by no means as serious as the injuries that may occur in a collision without airbag and safety belt tensioners.*



## **WARNING!**

- **Do not touch any parts of the airbag/safety belt tensioner systems after deployment.**

***After deployment the parts of the airbag/safety belt tensioner systems may be hot. Touching these parts can cause burns or serious injury.***

## **Work**

- Observe the DAF safety precautions when repairing, removing or replacing the airbag or safety belt tensioner system or parts thereof. For this reason, have this work carried out by an approved DAF Service dealer or DAF workshop only.
- Do not make any modifications to the airbag and safety belt tensioner system or parts thereof. This would cause an injury hazard and correct activation can then no longer be guaranteed.
- Observe the DAF safety precautions regarding the airbag and safety belt tensioner system when the vehicle is scrapped or dismantled.
- Retrofitting of accessories is only permitted if the accessories are approved by DAF for vehicles with an airbag and safety belt tensioner. Installation must take place at the position indicated by DAF and according to the procedure specified by DAF.
- When replacing the windscreen, observe a longer drying time for the windscreen sealant. This longer drying time is usually stated on the windscreen sealant packing or tube. If in doubt, contact DAF or the windscreen sealant supplier.
- If any welding is required, observe DAF's safety precautions for welding jobs.

## **Sales**

- If the ownership of the vehicle is transferred, the previous owner must make the new owner aware of the above instructions.

## **1.5 AEBS/ACC SENSOR**

Both Adaptive Cruise Control (ACC) and Advanced Emergency Braking (AEBS) use a radar sensor to detect objects in front of the vehicle.

The radar sensor can detect objects up to 150 metres in front of the vehicle. The radar sensor measures speed, distance and lateral position of the object or vehicle in front. To determine what 'relevant' objects are, all objects are divided in three categories:

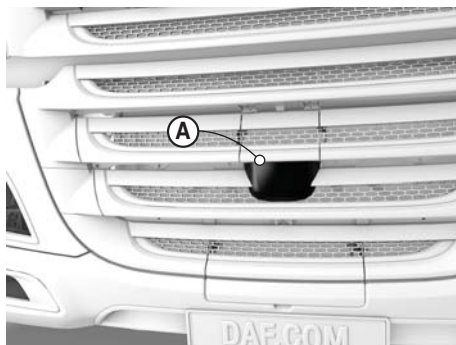
- Moving in the same direction.
- Moving in the opposite direction.
- Stationary.

1



**NOTE:** The radio emission of the radar sensor is way below legal limits and therefore in no way harmful to the driver or any other person.

This sensor is located behind a cover plate (A) in the grille of the vehicle.



D001623



**CAUTION:** Obstructing the AEBS/ACC sensor results in malfunctioning of the sensor, which can cause dangerous situations.

- It is not permitted to paint, sticker, glue, plaster or in any other way obstruct:
  - the front or rear area of the grille in front of the AEBS/ACC sensor (A),
  - the space between the sensor and the grille or
  - the sensor itself.
- Do not install accessories or other objects in front of the AEBS/ACC sensor.
- Keep the cover (A) of the AEBS/ACC sensor clean.



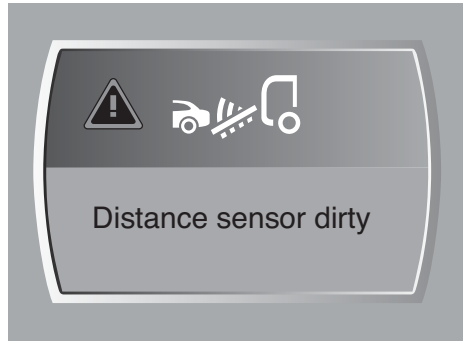
**NOTE:** Scratches or holes in the cover plate (A) can affect the functioning of the ACC and/or the AEBS. Consult a DAF Service dealer if the cover plate (A) is damaged.

## AEBS/ACC sensor dirty

The '**Distance sensor dirty**' warning is activated when the sensor cover and/or sensor is too dirty to operate properly. ACC and/or AEBS can no longer be engaged. Clean the sensor cover if this warning is active. Consult a DAF Service dealer if the warning remains after cleaning.



*NOTE: This warning can also be displayed when there are very few or no objects on and beside the road, in front of the vehicle.*



D001713

## 1.6 TECHNICAL ITEMS OF SPECIAL IMPORTANCE

To prevent damage to the vehicle, the following instructions must be strictly observed.

### Original components

To meet the warranty conditions and guarantee the service life, safety and reliability of the DAF products, the use of **non-original** components and software is not permitted and in some cases even illegal. The application of software, software settings and/or components not approved by DAF adversely affects critical systems in terms of the safety of the vehicle (for example, the brake system) or can lead to an engine power derate.

**The following technical items of special importance apply to both the running-in period and to the period thereafter.**

**After a cold start**, use a low gear and drive at a moderate engine speed until the engine coolant temperature is out of the blue zone.

While driving, check the **instrument panel** regularly and take appropriate action if there is anything unusual.

Unusual operation may include strange engine and transmission noises, smoke or poor performance.

Do not let the engine **idle longer than necessary**. This is harmful to the engine and also causes unnecessary pollution of the environment.

Be aware that **engine stalling** while driving leads to power steering failure. Consequently, vehicle steering is more difficult.

1

Before switching off the engine **after a long trip or when the engine has been subjected to high loading**, let it idle for at least 5 minutes. Let the engine run for a while to prevent the coolant temperature becoming too high and to allow the turbo charger to cool down.

The engine cooling system is thermostatically controlled.

**Removing the thermostat** when the coolant temperature is (too) high is strongly advised against, since this causes the engine temperature to rise to an even higher level.

The **turbo charger** is a precision component. Immediately report any abnormal noises produced by this component.

## Running-in

During the running-in period it is best not to subject the new vehicle to excessive loads. This also applies when an overhauled engine, gearbox or differential has been installed. Therefore, drive carefully and avoid accelerating sharply for the first 1500 km.

## System voltage

The vehicle is equipped with a **24-volt** electrical system.

When replacing or fitting electrical or electronic components, always check that the new components are suitable for this system voltage.

## Connecting accessories

Never connect accessories or any other electrical components to the vehicle by splicing the vehicle wiring or connecting it to electrical components. Failure to meet these conditions may have serious consequences on the electrical systems within the vehicle and can result in short circuits and fire.

Only connect accessories to the designated accessory plug connectors in the dashboard panel or cigar lighter, bearing in mind the maximum permissible power. It is also possible to connect accessories to the designated accessory connectors in the vehicle in consultation with a DAF Service dealer.

## Batteries

The vehicle is equipped with a set of two 12-volt batteries.



### CAUTION:

- ***Do not disconnect the battery cables while the engine is running. Disconnecting the battery cables while the engine is running can damage the electrical components in the vehicle.***

Always disconnect the battery earth cable before repairing or servicing the electrical system. Only disconnect the battery earth cable after switching off the ignition and waiting 90 seconds.

Failure to meet these conditions may have serious consequences for various electrical systems within the vehicle.

Never place tools on a battery. This may cause a short circuit and may even cause the battery to explode.

## Battery capacity

When the engine is not running, the use of electrical components such as the auxiliary heater or refrigerator draws power from the batteries.

Approximately half the battery capacity is required to start the engine.

If such components are used over a prolonged period, particularly during low temperatures, they may eventually use so much power that there is not enough left to start the engine.

## Main switch

**Only switch off the main switch after switching off the ignition and waiting 90 seconds.** The afterrun phase EAS (Emission Aftertreatment System) must have ended before operating the main switch.



### **WARNING!**

- **Never operate the main switch while driving.**
- **Never operate the main switch while the ignition is on.**  
**Operating the main switch while driving switches off all electrical systems and the engine. This can lead to very dangerous situations and damage to the vehicle electronics.**

## Air leakage

If the **pressure in the air reservoirs** drops rapidly with the engine switched off, this indicates a leak. Since this affects the safety of the brake system, trace and repair the leak as quickly as possible.

## Steering

The steering gear is hydraulically assisted. As excessive pressure may damage the hydraulic pump, stop turning the steering wheel when the wheels are at full lock or are blocked by an obstacle. If this is ignored, the steering gear may be damaged.

## Differential

The differential can be equipped with a differential lock. This differential lock may only be used when driving on soft ground or on a slippery road surface.



### **CAUTION:**

- **When excessive wheel slip is detected, observe the directions for use and engage the differential lock.**  
**Excessive wheel speed difference between the wheels on an axle when driving on soft ground or on a slippery road surface can lead to serious damage of the differential.**



1



## **CAUTION:**

- ***Never press the accelerator when the vehicle rolls off in the opposite direction to that of the engaged gear.  
If the vehicle rolls off in the opposite direction to that of the engaged gear, the differential may be overloaded or damaged when the accelerator is pressed.***

## **Mobile telephones and transmitters**



### **WARNING!**

- ***Do not use mobile telephones or transmitters in the cabin without a separate outside aerial.  
The use of mobile telephones or transmitters in the cabin interior may cause excessively high electromagnetic fields (resonance effect). This may interfere with the operation of the vehicle electronics and result in dangerous situations and injury.***

If mobile telephones and transmission equipment are used, take the following points into account:

- Do not use mobile telephones or transmitters in the vehicle when there is no separate outside aerial!
- Moreover, an outside aerial is necessary to achieve the maximum range of the equipment.



**NOTE:** *Observe the instructions for use of mobile telephones and transmitters!*

## **Welding**

For welding instructions on the vehicle and/or superstructure, consult a DAF Service dealer.

Not following the welding instructions can damage the electronic components.



## 2.1 THE THEFT PREVENTION SYSTEM

2

The DAF theft prevention system consists of several forms of protection, each of which protects the vehicle in a different way:

- The immobiliser (electronic drive-off lock) prevents the engine from being started without the correct ignition key.
- The alarm system (ALS-S). ALS-S makes sure that when unauthorised persons gain access to the vehicle, this can be seen and heard from the outside via acoustic and visual alarms.

A system LED blinking indicates that the theft prevention system is activated.



*NOTE: If a vehicle does not have an alarm system (ALS-S) but it does have an immobiliser, there is always a system LED. This LED flashes at a low frequency when the ignition is switched off.*

## 2.2 USING THE IGNITION KEY OR HAND-HELD TRANSMITTER



D001668

### Unlocking the doors

Pressing button (2) unlocks the driver's door and switches the delayed interior lights on. The alarm system (ALS-S) is then also deactivated. The hazard warning lights flash three times to indicate the alarm system is deactivated.

If the unlock button is pressed a second time within three seconds after unlocking the driver's door, the co-driver's door will be unlocked.



*NOTE: If no door is opened within 30 seconds after unlocking, the doors automatically re-lock.*

### Locking the doors

A short press of about one second on button (1) locks both doors. The alarm system is then also activated. The hazard warning lights go on for three seconds.

The system LED will flash at a slow rate after approximately 50 seconds. The alarm system is now fully operational.

The doors, cabin tilting mechanism, interior and loading space (if this has an alarm system) are now protected.



*NOTE: A long press of about two seconds on button (1) initiates comfort locking (central locking + closing windows + activation of the alarm system).*



*NOTE:*

- *Make sure that there is nothing in the interior that can cause a false alarm, for example moving objects in the cabin.*
- *A wireless network (LAN) inside the cabin has influence on the alarm system. When a notebook PC with a wireless network is on inside the cabin and the alarm system is switched on, the alarm can go off unintentionally. Therefore always switch off the notebook PC with a wireless network or switch off the interior protection before activating the alarm system. See section 'Use when staying in the cabin' in the chapter 'Alarm system'.*
- *Do not press the buttons unnecessarily hard.*



*NOTE: In addition the ignition key or hand-held transmitter can be used to perform a manual exterior lighting check. See section 'Exterior lights'.*

## 2.3 SELF-DIAGNOSIS

The alarm system (ALS-S) has an extensive self-diagnostic function. Following activation, all detection circuits (for the interior, load space, cabin tilting mechanism and doors) are automatically tested.

If a fault is found in one or more of these detection circuits, the affected circuits are switched off. This is made noticeable by a short signal from the siren immediately after activation of the alarm system.

If this signal is heard, first of all check whether the windows and doors are closed properly.

Switch off the alarm system, close everything carefully and switch on the alarm system again. See section 'Using the ignition key or hand-held transmitter'.

If the short signal is heard once again, this means that the system is (partially) defective. Visit a DAF Service dealer to check the system.

## 2.4 USE WHEN STAYING IN THE CABIN

If people remain in the cabin, the system may only be activated if the cabin interior detection is switched off. This avoids unnecessary sounding of the alarm.



**NOTE:** If the interior detection is **not** activated, the alarm **still works** on the doors, the cabin lock and cargo space. The start lock is also activated.

The cabin interior detection is deactivated as follows:

1. Deactivate the alarm system.
2. Press the 'Alarm cabin interior detection off' switch. The system LED lights up for approximately 2 seconds.
3. Then activate the alarm system with button (1) on the ignition key. The cabin interior detection has now been switched off. It is then possible to stay in the cabin while retaining the other detection options.



D001668

Switch off the entire system using button (2) on the ignition key or hand-held transmitter if the cabin is left from time to time.

Outside the vehicle, the choice can be made between:

- not activating the alarm system, or
- activating the alarm system with button (1) on the ignition key or hand-held transmitter.



**NOTE:** On returning to the cabin, carry out the procedure once again to deactivate the cabin interior detection.

The 'Alarm cabin interior detection off' switch is spring-loaded and returns to the original position. Deactivating and activating the alarm system therefore reactivates the cabin interior detection.

## 2.5 DEACTIVATING THE SUPERSTRUCTURE OR TRAILER CARGO SPACE DETECTION

If people remain in the cargo space, the system may only be activated if the cargo space detection is switched off. This avoids unnecessary sounding of the alarm.



**NOTE:** If the cargo space detection is **not** activated, the alarm **still works** on the doors, the cabin lock and the cabin interior. The start lock is also activated.

Deactivate the cargo space detection as follows:

1. Deactivate the alarm system.
2. Press the 'Alarm cargo space detection off' switch. The system LED lights up for approximately 2 seconds.
3. Then activate the alarm system with button (1) on the ignition key or hand-held transmitter. The cargo space detection has now been switched off. It is now possible to stay in the cargo space while retaining the other detection options.



D001668

To protect the cargo space again, switch off the alarm system and switch it on again.



**NOTE:** The 'Alarm cargo space detection off' switch is spring-loaded and returns to the original position. Deactivating and activating the alarm system therefore reactivates the cargo space detection.

## 2.6 THE SYSTEM LED

The system LED is located in the underside of the roof console lockers.



D001756

2

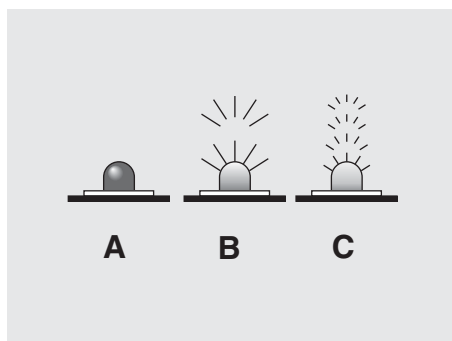
If the LED is off (A), the vehicle may be started.

If the LED flashes slowly (B), the alarm system is active.

If the LED flashes quickly (C), a self-test is carried out or an error message is given with a flashing code.



**NOTE:** After the alarm is switched on the LED flashes quickly (C) for about 50 seconds. After that period the LED flashes slowly (B).



D000483-2

If the system raised an alarm, the cause can be determined via the system LED by reading the flashing code (C).

This indication is displayed for 30 seconds after the system has been deactivated with button (2) of the ignition key.

Flashing code	Circuit
3	Driver door detection
4	Cabin approximation switch detection (cabin lock)
5	Power supply after ignition
6	Superstructure and trailer cargo space detection
8	Superstructure and trailer cargo space detection
9	Interrupted wire
10	Co-driver door detection
11	Radar sensor cabin interior detection

## 2.7 LOSS OF THE IGNITION KEY

After replacing it, the lost ignition key can be rendered unusable by erasing the code from the central door locking memory.

Without the ignition key, the alarm system cannot be switched off.

## 2.8 SYSTEM DOES NOT RESPOND TO THE TRANSMITTER IN THE IGNITION KEY

If the system does not respond to the transmitter in the ignition key, the following tips may provide a solution:

1. Check whether the battery of the ignition key still works. This is indicated by whether or not the LED on the ignition key lights up.

2. A strong radio transmitter in the area may affect the range of the transmitter in the ignition key. Operate the ignition key buttons as close as possible to the electronic control unit. The electronic control unit is located at the front of the vehicle, on the co-driver side.
3. If the system does not respond to the transmitter, switch off the alarm system by opening the vehicle with the key and switching on the ignition. The alarm system cannot be activated with the ignition key.

## 2.9 BATTERY FOR THE TRANSMITTER IN THE IGNITION KEY

Battery type: 3 V Lithium battery CR 2032. Depending on the use, the expected lifetime of the battery is at least three years.

### Changing the battery

To remove the battery cover, first lift it on the opposite site of the ignition key blade.



*NOTE: As the ignition key blade side of the battery cover has a little locking pin, lifting it from that site destroys the cover.*

Replace the battery (plus side up) and fit the battery cover.



*NOTE: First slide in the little locking pin and then close the rest of the battery cover.*

## 2.10 MAINTENANCE

Have the alarm system checked at least once per year by a DAF Service dealer. This guarantees optimum protection.

## 2.11 DISCONNECTING THE VEHICLE BATTERIES

If the vehicle batteries must be disconnected, switch off the alarm system first to prevent the signal horn from sounding.

## 2.12 INSURANCE COMPANY

Depending on the configuration the alarm system complies with the following insurance categories:

SCM: B2 or B3

Thatcham: H1 or H2



Ask your insurance company whether this has any consequences for the insurance.

**Make sure that the system is always activated when leaving the vehicle.**



## 3.1 CABIN

### 3.1.1 Cabin

3

The CF has three types of cabin:

#### Day Cab



D001758

#### Sleeper Cab



D001759

## Space Cab

3



D001781-2

### 3.1.2 Entering and leaving the cabin

To get in and out of the cabin, use the grab handles on the left- and right-hand door pillars and not the steering wheel. Also use all the steps and always face the cabin when getting in or out.



*NOTE: The vehicle is equipped with a park brake warning system. If the driver door is opened while the engine has been switched off and the park brake has not been applied, an acoustic signal is given and a warning symbol is shown on the instrument panel.*



D001760



*NOTE: When one of the doors is opened without the exterior lights on, some of the switches are illuminated for 20 seconds.*

3

Vehicles with a manual gearbox have the possibility to tilt the gear change lever backwards. This creates more space between the driver seat and the centre section of the cabin.



**WARNING!**

- **Only tilt the gear change lever when the engine is switched off. Tilting the gear change lever while the engine is running can cause the vehicle to move unintentionally and can cause injury.**



D001761

To tilt the lever, pull up the knob underneath the lever (1) and move the lever backwards (2).

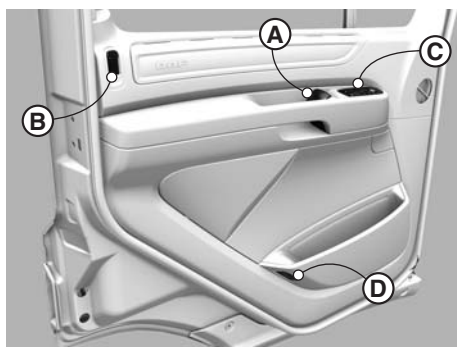
### 3.1.3 Doors



**WARNING!**

- **If the doors are not properly closed, do not drive the vehicle. Driving the vehicle with the doors not properly closed can cause the door to open unintentionally and lead to serious injury.**

- A Door handle
- B Door locking knob
- C Control panel for electrically operated windows, mirrors and mirror heater
- D Door open warning lamp



D001762

### Standard version

#### Locking and unlocking from the outside

Both doors can be locked and unlocked from the outside using the key.

Only the driver's door is unlocked with the key.

Both doors are locked when one of the doors is locked with the key.

#### Avoid locking yourself out!

### Opening the door from the inside

Pull handle (A) to open the door from the inside. If the door is locked, it is automatically unlocked.



The co-driver side can be unlocked and locked from the driver's position using the two-position switch on the centre console.

### Locking the door from the inside

Press knob (B) on the window pillar.



D001552

### Central door locking

To open the doors of a vehicle with central door locking, use the same procedure as described for the standard version.

### Ignition key

See section 'Using the ignition key' in the chapter 'Alarm system' for locking and unlocking the doors with the buttons of the ignition key.

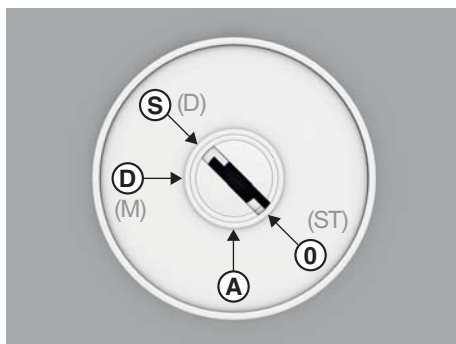
## 3.1.4 Steering lock/ignition/starter switch

3



### **WARNING!**

- *Never turn the ignition key to the rest position 0 (ST) or remove it while the vehicle is in motion. If the steering wheel lock is engaged, the vehicle cannot be steered while the vehicle is in motion. This can lead to serious injury and damage to the vehicle.*



D001669



### **CAUTION:**

- *Always remove the key straight from the ignition lock. Removing the ignition key at an angle from the lock can result in snapping the key or damaging the ignition lock.*

### **Position 0 (ST): rest position**

When the key is removed in this position the steering wheel can be locked. If the steering wheel is turned slightly, the steering wheel locks.

### **Position A: accessories position**

Steering wheel unlocked. The key cannot be removed. Accessories, such as a radio, can be switched on.

### **Position D (M): ignition switched on**

All power consumers can be switched on.

### **Position S (D): starting**

When the key is released, it automatically returns to position D (M). If the engine is running, the starter lock is activated.



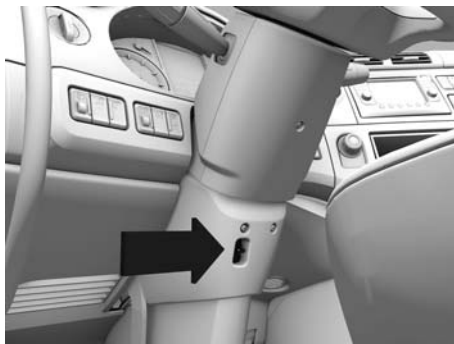
**NOTE:** When starting, the power supply to the accessories (position A) is temporarily shut off.

### 3.1.5 Steering column adjustments



**WARNING!**

- *Only adjust the steering column while the vehicle is stationary. Adjusting the adjustable steering column during driving can cause unintentional steering movements and can cause injuries.*



D001763

#### Adjusting

Push up the two-position switch. The steering column is temporarily unlocked. The height and angle of the steering wheel can now be adjusted.

#### Locking

Push down the two-position switch. The steering column is locked.



*NOTE: When the two-position switch is operated a light hissing noise is audible.*

*If the steering column has not been locked, this switch locks it automatically after 20 - 30 seconds.*

### 3.1.6 Mirrors

The complete mirror bracket can be folded against the cabin, and returns to its original position by folding the bracket back again.

In addition to the main mirror and the wide view mirror, there may also be a kerb mirror and a front view mirror, providing the driver with a better view.



*NOTE: Clean the mirrors with a wet sponge or damp cloth only.*



D001764



## Manually adjustable mirrors

Manually adjustable mirrors can be adjusted by hand; push the mirror in the required direction.

3



D001554

## Electrically adjustable mirrors

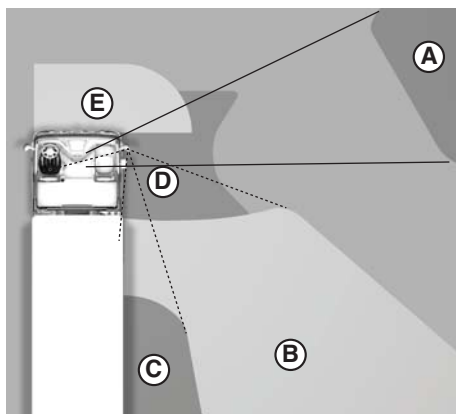
For information about electrical mirror adjustment, see section 'Electrical mirror and window control'.

### 3.1.7 Setting the mirrors

First set the seat in the correct driving position. Then adjust the mirrors to the correct positions.

### Co-driver side mirrors with field of vision projected on the ground

- A Side window
- B Wide view mirror
- C Main mirror
- D Kerb mirror
- E Front view mirror



D001712

### 3.1.8 Electrical mirror and window control

#### Control panel

##### Control panel in driver's door

- 1 Mirror adjustment control switch
- 2 Left main mirror selection switch
- 3 Right main mirror selection switch
- 4 Left wide view mirror selection switch
- 5 Right wide view mirror selection switch
- 6 Mirror heater switch
- 7 Mirror heater indication light
- 8 Left door window control switch
- 9 Right door window control switch



3

D001530-2

### Control panel in co-driver's door

10 Right window control switch

3



D001531

## Window control

The door windows can only be operated when the ignition is on. If a window has been left open by mistake, or **in case of an emergency**, it is still possible to close or open a door window for a short period after the ignition has been switched off.

### Opening and closing a door window

- To open a door window fully (express down), press the bottom of a control switch (8, 9 or 10) for a short period (approximately 0.5 seconds).
- To close a door window fully (express up), press the top of a control switch (8, 9 or 10) for a short period (approximately 0.5 seconds).
- To stop a moving door window, press the control switch in the opposite direction before completing the operation.
- To open or close a door window partly, press and hold the bottom of a control switch (8, 9 or 10). Releasing the control switch stops the door window from moving.

### Anti-pinch protection

The window also stops moving when the anti-pinch protection is active. When blocked by an object, the direction of movement is reversed and the window goes partially down.

If the anti-pinch protection was active, the express-up and express-down functions may be deactivated. To reactivate this function, close the window fully without making an intermediate stop, by continuously pressing the top of a control switch (8, 9 or 10).

## Mirror control

### Mirror adjustment

The electronically controlled mirrors can be adjusted as follows:

1. use the selection switches (2, 3, 4 or 5) to select a mirror.
2. use switch (1) to adjust the mirror in the correct position.

### Mirror heating

Switch (6) is to switch the heating of the external mirrors on and off. The kerb mirror and front view mirror are not heated. The mirror heater is switched on when the indicator light (7) in the switch is on.

When the ignition is switched off, the mirror heater is switched off as well.

## 3.1.9 Interior lighting



### CAUTION:

- **Switch off the interior lighting when parking the vehicle for a longer period.**  
**The interior lighting uses power from the batteries. If this lasts for a long time, it can result in low battery capacity and starting difficulties.**

Activate the various interior lights by using the switches in the centre console, roof console or bunk console.

All interior lighting works independently of the position of the ignition switch.



The switch on the instrument panel can be used to extinguish all the interior lighting in the cabin.



**NOTE:** When this switch has been activated, the interior lighting remains off, even if the doors are opened.

### Fluorescent lamp

There may also be a fluorescent lamp (version-dependent); this lamp can be operated with a switch located on the side of the lamp holder.

3



D001785

### Lighting in the cabin roof

Here there is a reading light and a spotlight above the driver seat and a reading light above the co-driver seat. The reading lights and the spotlight can be switched on using the switches on the dashboard, the bunk panel and the roof console.

The interior lighting operates independently of the position of the ignition key.



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### 3.1.10 Bunks

#### Upper bunk

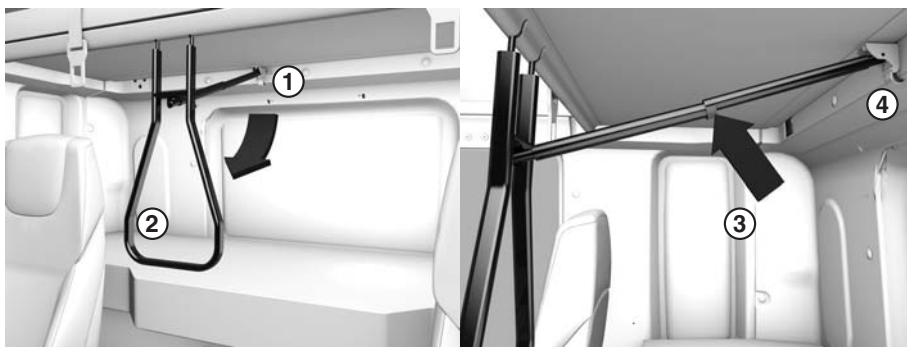


D001788

Putting bunk in horizontal position:

1. Push the bunk somewhat up and release both belts.
2. Lower the bunk carefully until it rests on the recess in the side wall.

## Folding down the steps



D001782

To ease access to the upper bunk, fold the steps located against the bottom side of the bunk forward.

1. Loosen the steps (2) by releasing the lock (1).
2. Fold the steps forward until the lock (3) of the damper (4) falls in position.
3. To fold the steps back, lift the damper lock (3) fold up the steps and push the steps in lock (1) until it clicks in position.

## Lower bunk

The lower bunk also acts as the cover for the storage compartments underneath.

There are different layouts for the space underneath the bunk.

The standard layout has two storage boxes, one behind each seat.

The storage space may also contain a fixed storage box or a cool box.

Partitions can be fitted into the storage box, preventing the items inside from being tossed about.

Extra partitions are available through the DAF Service dealer.



D001790



**NOTE:** Make sure that the cool box, either open or closed, is properly locked, so that it cannot open or close accidentally while driving.

The space behind the co-driver's side can also be reached from the outside.

### 3.1.11 Bunk lamp

The bunk lamp operates regardless of the position of the ignition key.

3

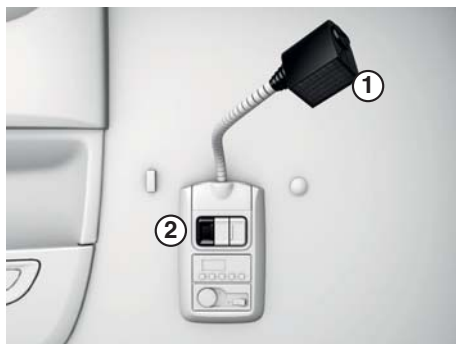


**CAUTION:** *The bunk lamp uses power from the batteries. If this lasts for a long time, it can result in low battery capacity and starting difficulties.*

- **Switch off the bunk lamp when parking the vehicle for a longer period.**

### Lower bunk

The lower bunk is provided with a reading light. This reading light can be operated with switch (1). In addition to the reading light, the interior lighting on the co-driver side can be operated using switch (2).



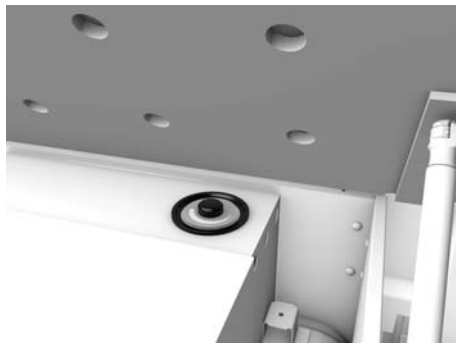
D001563

### 3.1.12 Cool box

#### Switching the cool box on/off

The cool box can be switched on or off with the rotary knob.

The cool box functions with the ignition on and off. The correct functioning of the cool box is only guaranteed when the engine is running. This is because the cool box switches itself off automatically when the battery voltage drops below a certain value.



D001791



**NOTE:** *The cool box also uses power from the batteries when the ignition is off. If the vehicle is parked for a long period, switch off the cool box. Failure to switch off the cool box can result in starting difficulties.*

## Setting the cool box temperature

Turn the rotary knob to maximum to decrease the temperature and turn it to minimum to increase the cool box temperature.

## Cleaning

Only clean the cool box with non-aggressive household cleaner.

### 3.1.13 Ashtray

An ashtray is installed in the centre console for both the driver and co-driver. The ashtray can be opened by pulling the small handle downwards. Press down the locking lip to empty the ashtray. This locking lip also serves to close the ashtray when removing its contents. The entire ashtray can then be removed from its holder from the front.



D001765

Put the ashtray back by pushing it into the holder with the flap open and then pushing up the holder.



D001766

### 3.1.14 Accessory plug connectors and air connection



**CAUTION:**

- *Never connect accessories or any other electrical components to the vehicle by splicing the vehicle wiring or connecting it to electrical components.*
- *Only connect accessories to the designated accessory plug connector in the dashboard centre console, the cigar lighter or the driver seat console, bearing in mind the maximum permissible*



*power. It is also possible to connect accessories to the designated accessory connectors in the vehicle in consultation with a DAF Service dealer.*

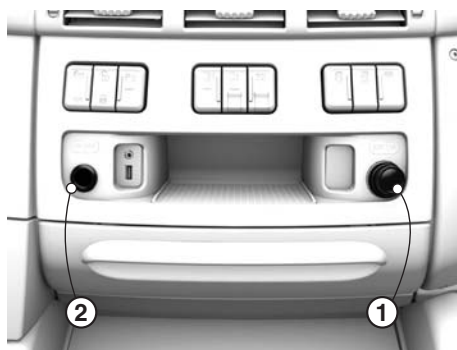
*If accessories are not connected via an accessory plug connector, there can be serious consequences to the electrical systems within the vehicle, resulting in short circuits and fire.*



**CAUTION:**

- *Disconnect accessories if they are no longer used. Accessories draw power from the batteries. If this lasts for a long time, it can result in low battery capacity and starting difficulties.*

### Accessory plug connectors on the dashboard centre console



D001767

#### 1. 12V/5A lighter/accessory plug connector

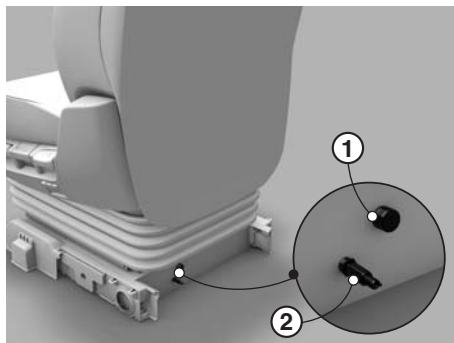
If the lighter plug is used to connect accessories, maximum power is limited to 60 watts. Always check that the accessory connected is suitable for **12 volts**.

#### 2. 24V/15A accessory plug connector

If this plug is used to connect accessories, maximum power is limited to 360 watts. Always check that the accessory connected is suitable for **24 volts**.

## Accessory plug connector and air connection below the driver seat console

Only for Luxury air and Super air versions



D001569

3

### 1. 24V/10A accessory plug connector

If this plug is used to connect accessories, maximum power is limited to 240 watts. Always check that the accessory connected is suitable for **24 volts**.

### 2. Compressed air connection

For instance, this connection can be used to connect a blow gun.

## 3.1.15 Window shades



### **WARNING!**

- ***Make sure that the mirror visibility is not obstructed. Poor or no visibility around the vehicle leads to dangerous situations and serious injury.***

Sun visors are installed for the driver and co-driver in front of the windscreen. As a protection against sun glare, the sun visors can be folded down. Moveable blinds have been installed on the driver and co-driver side door window.

## Folding down sun visors

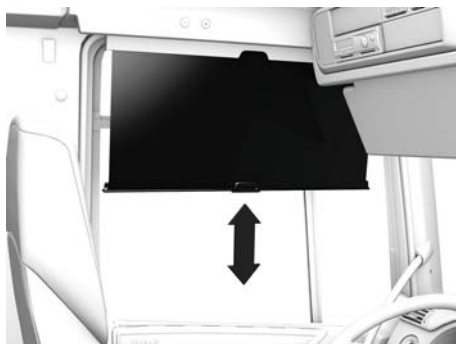
3



D001795

## Pulling down side window blinds

Pull the lip; the blind remains in the required position.



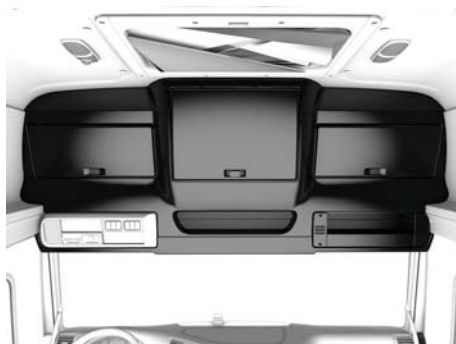
D001796

## Rolling up side window blinds

Push the lip of the blind up; the blind rolls up.

### 3.1.16 Roof console lockers

There are several lockers in the roof console. The layout and size depend on the cabin type.



D001797

**CAUTION:**

- *Close the roof console locker doors properly, so that the lighting in the lockers is switched off.*

*The lighting in the lockers uses power from the batteries. If this lasts for a long time, it can result in low battery capacity and starting difficulties.*

### 3.1.17 Roof hatch

The roof hatch can be opened and closed electrically.



The roof hatch switches are located on the roof console and bunk console.

### 3.1.18 Stepwell lighting

In the stepwells at both sides of the cabin, lights are fitted. The lights go on as soon as the door is opened.

### 3.1.19 Windscreen wiper blades

Switch off the windscreen wipers before switching off the ignition.

Clean the windscreen wiper blades regularly with water and dry them with a soft cloth. Before operating the windscreen wiper blades in winter conditions, check that the blades are not frozen to the windscreen to prevent damage. To prevent the blades freezing to the windscreen, something can be placed between the blades and the windscreen.

## 3.1.20 Tool/storage compartments

3

Tool/storage compartments are located on both sides and can be accessed from outside the cabin. The compartment can also be accessed from inside the cabin. Unlock the cover from the inside using the knob located between the grab handles on the door pillars and the seat.



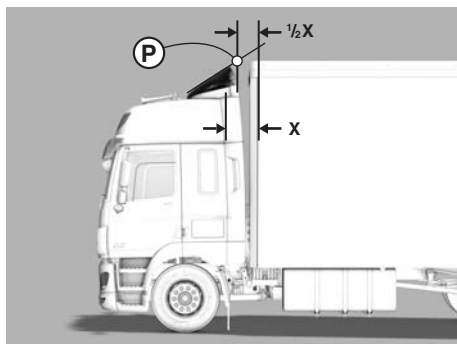
D001776

## 3.1.21 Adjusting the roof spoiler



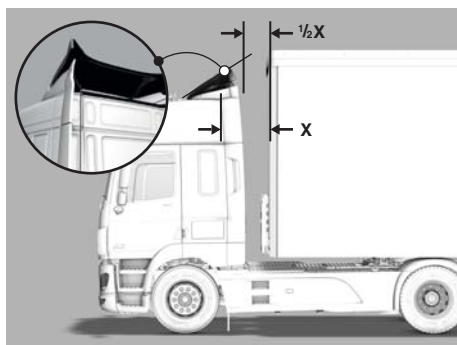
**NOTE:** Correct adjustment of the roof spoiler is essential to minimise fuel consumption.

1. Place the vehicle on a level and horizontal surface. Make sure that in the case of a tractor and semi-trailer combination the tractor is straight in front of the semi-trailer.
2. Determine the centreline of the vehicle and put a slat, protruding in the direction of the cabin, on the superstructure roof.



D001779

3. Put another slat (as a tangent) onto the outer roof spoiler edge (P) pointing in the direction of the superstructure. Both slats must cross at half the distance ( $\frac{1}{2} X$ ) between the roof spoiler edge and the start of the superstructure.



D001778

4. The roof spoiler height can be adjusted using mechanism (B).



D001517

3

## 3.2 SEATS AND SAFETY BELTS

### 3.2.1 Seats



#### **WARNING!**

- *Never drive with the seat reclined too far back.*
- *Always sit in an upright position and use the seat backrest.*
- *Adjust the armrests so that the freedom of movement to operate the vehicle is not obstructed.*

*Any incorrect positioning or adjustment of the seat and armrest can increase the risk of serious or fatal injury during driving or braking manoeuvres, or in the event of an accident or collision.*



#### **WARNING!** *Adjusting the driver seat during driving can cause unintentional steering movements and can cause injuries.*

- *Only adjust the driver seat while the vehicle is stationary.*
- *Only adjust the seat when the seat is occupied and there is nothing or no one in the adjustable range of the seat.*

#### **Important points**

- Read this section thoroughly and acquaint yourself with the seat controls.
- The vehicle air pressure must be a minimum of 8.6 bar.
- Never operate several controls at the same time.
- The seat fixings and component parts must be checked for wear from time to time by qualified personnel. Consult a DAF Service dealer.
- The seat may only be repaired and fitted by qualified personnel. Consult a DAF Service dealer.

#### **Seat adjustment tips**

A proper seating position is achieved bearing in mind the following tips. Make sure that:

- Pedals can be operated in the correct way.
- Upper legs are horizontal.

- The angle between upper legs and lower legs is between 90 and 120 degrees.
- Upper legs, pelvis and lower back are well supported.
- A fist can be placed between the seat cushion and the hollow at the back of the knee.
- The backrest is lightly tilted backwards.
- Arms and shoulders are relaxed.
- While shifting and or steering the back does not leave the backrest.

### **Seat controls and adjustments**

Depending on the comfort level different seat controls and adjustments are available.

The following seat comfort levels exist:

- Basic.
- Comfort Air.
- Luxury Air.
- Luxury Air, ventilated.
- Super Air.
- Super Air, ventilated.



D001533-2

- |   |                                 |    |                                |
|---|---------------------------------|----|--------------------------------|
| 1 | Backrest angle adjustment.      | 8  | Armrest.                       |
| 2 | Seat height adjustment.         | 9  | Safety belt height adjustment. |
| 3 | Seat tilt adjustment            | 10 | Seat heater.                   |
| 4 | Quick down.                     | 11 | Lumbar support adjustment.     |
| 5 | Vertical seat damper.           | 12 | Lateral support adjustment.    |
| 6 | Seat length adjustment.         | 13 | Seat ventilation               |
| 7 | Seat cushion length adjustment. | 14 | Shoulder support adjustment.   |



## 1. Backrest angle adjustment

3



D001534



Pull up the locking lever to adjust the backrest angle. Once the desired angle has been achieved, release the lever.



*NOTE: Make sure that the seat can move up and down freely after the backrest angle is adjusted.*

## 2. Seat height adjustment



D001535



The height is adjustable in fourteen steps. Pull or push the height adjustment lever to move the seat one step up or down. The handle must be released before re-adjusting the height another step up or down.

### 3. Seat tilt adjustment



D001536



Pull the lever to adjust the complete seat angle. Once the desired angle has been achieved, release the lever.

### 4. Quick down



D001537



Press the button to move the seat down into the lowest position. Press the button again to raise the seat back up to the last saved height.



*NOTE: This function is especially for getting in and out of the vehicle easily.*

## 5. Vertical seat damper

3



D001538



Adjust the suspension characteristics of the seat with the vertical seat damper switch.

The suspension characteristics of the seat can be optimised in four steps. Switch in top position: minimum damping ('soft' comfort).

Switch in bottom position: maximum damping ('hard' comfort).

## 6. Seat length adjustment



D001539

Pull the lever to adjust the complete seat length. Once the desired length has been achieved, release the lever.



**NOTE:** Make sure that the seat can move up and down freely after the seat length is adjusted.

## 7. Seat cushion length adjustment



D001540

Pull the lever to adjust the seat cushion length. Once the desired length has been achieved, release the lever.

## 8. Armrest

The armrest is fitted on the co-driver seat and on the driver seat of vehicles with AS Tronic.

If necessary, the armrest can be folded away.



**CAUTION:** Do not use the armrest as a step to gain access to the upper bunk.



D001541

Adjust the armrest angle by turning the adjusting wheel.

3



D001542

## 9. Safety belt height adjustment

See section 'safety belts'.

## 10. Seat cushion heating



### **WARNING!**

- *Persons with reduced pain or temperature perception cannot use the seat heater.*

*Persons suffering from reduced pain or temperature perception for any reason whatsoever can sustain burns to the back, buttocks and legs when using the seat heater.*



D001544



By operating the seat heater switch, the heating pads in the backrest and seat cushion can be heated (two heating levels).

0: Heating off

1: Heating on, level 1

2: Heating on, level 2

## 11. Lumbar support adjustment

Only for Comfort air version

3



D001546-2



Use this switch to adjust the lumbar support of the backrest.

Only for Luxury air and Super air versions

Use these switches to adjust the lumbar support of the backrest. The lower and upper lumbar support sections can be adjusted individually.

- 1: Lower section (switch to the front)
- 2: Upper section (switch to the rear)



D001547-2



Use these switches to adjust the lower section of the lumbar support of the backrest.



Use these switches to adjust the upper section of the lumbar support of the backrest.

3

## 12. Lateral support adjustment

Not on the basic version



D001545-2



Use this switch to adjust the lateral support of the backrest.



*NOTE: Adjust the lumbar supports before adjusting the lateral support.*

## 13. Seat cushion ventilation



D001577-2



By operating the seat ventilation switch, the ventilating pads in the backrest and seat cushion produce an air flow (two levels).

0: Ventilation off

1: Ventilation on, level 1

2: Ventilation on, level 2

3

## 14. Shoulder support adjustment



D001960



Use this switch to adjust the shoulder support of the backrest.

## Cleaning the seats

See section 'Cleaning' in the chapter 'Inspections and maintenance'.

### 3.2.2 Safety belts

The seats are equipped with safety belts. Not wearing a safety belt can cause serious injury or death during a collision.



#### **WARNING!**

- ***ALWAYS wear safety belts (mandatory in some countries)!***
- ***The safety belts must audibly click shut.***
- ***Never use a clip or other device to reduce the safety belt tension.***
- ***Vehicles equipped with an airbag always have safety belts with tensioner both for the driver's and the co-driver's seat. To ensure proper operation of the airbag, it is absolutely essential to wear the safety belts.***
- ***Vehicles equipped with VSC (Vehicle Stability Control) may unexpectedly brake hard in certain situations.***





### **WARNING!**

- *Never have repairs or modifications made to the safety belts.*
- *Renew the safety belt when the webbing is worn or damaged. Contact a DAF Service dealer.*

3

*Making repairs or modifications to the safety belts affects the correct functioning of the safety belt.*



### **WARNING!**

- *The complete safety belt assembly must be renewed after a collision, even if there is no visible evidence of damage. Contact a DAF Service dealer.*

*The correct functioning of the safety belts after being subjected to high load during a collision cannot be guaranteed.*

## **Wearing the safety belt**

- Do not twist the safety belt when putting it on.
- Make sure that the tongue snaps firmly into place when pushed into the buckle.
- Adjust the safety belt height. The safety belt must fit snugly across the body

## **Adjusting the safety belt height**

Press the lever and adjust safety belt height (four steps are possible). The locking mechanism must lock into place with an audible click after the lever is released.



D001543

- When unfastening the safety belt, allow the belt to retract so that the belt forms a straight line between the anchorage points.

## **Checking the safety belts**

- Give a short pull on the safety belt to test the locking mechanism. During this test, the belt must lock and it must not be possible to pull the safety belt out of the retracting unit after locking.  
Repeat this check regularly, for example when putting on the safety belt, to check the mechanism.  
The locking mechanism must be replaced and/or repaired immediately if it is defective. Contact a DAF Service dealer.
- Inspect the belts regularly for wear.

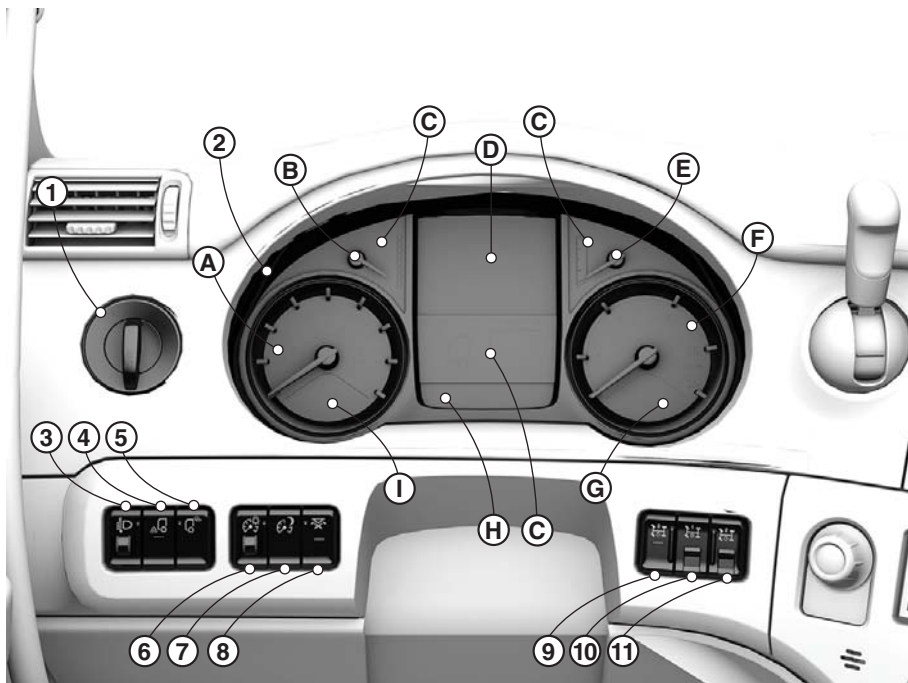
## Cleaning the safety belts

See 'Cleaning' in the chapter 'Inspections and maintenance'.

### 3.3 INSTRUMENTS AND CONTROLS

3

#### 3.3.1 Instrument panel



D001769

- |    |  |    |                             |
|----|--|----|-----------------------------|
| 1  | Light switch   | 2I | Speedometer display         |
| 2  | Instrument panel                                     | 3  | Headlight height adjustment |
| 2A | Speedometer  | 4  | Static cornering lights     |
| 2B | Fuel level and AdBlue level gauges                   | 5  | Work light                  |
| 2C | Warning indicators                                   | 6  | Instrument lighting dimmer  |
| 2D | Master display                                       | 7  | Dimmed Instrument Lighting  |
| 2E | Coolant temperature gauge                            | 8  | Interior lights off switch  |
| 2F | Rev counter  | 9  | Not used                    |
| 2G | Tachometer display                                   | 10 | PTO-1 switch                |
| 2H | Clock, outside temperature and trip odometer display | 11 | PTO-2 switch                |

## 1. Light switch

The switch is a rotary switch with a spring-loaded position and three static positions:

3



Spring-loaded position:

Switch off daytime running lights.

When the engine is running and the lighting is not switched on, the daytime running lights come on automatically. Apply the park brake and turn the light switch to this position. Hold it in this position for a short while to switch off the daytime running lights.

The yellow warning on the instrument panel indicates the function is switched off.



Position 0: Lighting switched off.



Position 1: Marker lights on.



Position 2: Headlights and marker lights on.



**The light switch must be in position 1 or 2.**

Front fog lights

Pull out the light switch one step to switch on the front fog lights.

When the front fog lights are on, the warning indicator on the instrument panel is visible.



Rear fog lights

Pull out the light switch one step further to switch on the rear fog lights together with the front fog lights.

When the rear fog lights are on, both warning indicators on the instrument panel are visible.

If no front fog lights are fitted, the switch can only be pulled to the second step when the light switch is in position 2. Only the warning indicator for the rear fog lights will be on.

## 2. Instrument panel

**KM/H**  
**mph**

### A. Speedometer

Depending on the vehicle model, the speedometer has a single scale division in km/h or a double scale division in km/h and mph.

**B. Fuel level gauge**

The fuel level gauge only operates with the ignition switched on.  
Note the delay on the gauge when the ignition is switched on.

**C. Warning indicators**

Indicators for functions that are switched on or off.

**D. Master display**

See the chapter 'Master display'.

**E. Coolant temperature gauge**

Do not operate the engine under full load when the temperature is in the blue field.

The engine is at operating temperature when the gauge pointer is vertical or slightly higher.

- If the coolant temperature suddenly rises and/or the pointer is in the red field, check the following points:
- The coolant level (caution – danger of scalding). See section 'Topping up coolant' in the chapter 'Inspections and maintenance'.
- The poly-V-belt and water hoses.
- The fan clutch.

**F. Revolutions counter**

- Green and semi-green area: economical.
- Blue area: only permitted when driving downhill and for optimal use of the engine brake.
- Red area: not permitted.

**G. Tachometer display**

Selected gearbox functions are visible in the tachometer display.

**AS Tronic automatic gearbox:**

- Current gear indicator.
- Manoeuvre mode setting.
- Manual or automatic mode.
- Off-road mode active.

**Manual gearbox:**

- High or low gearing selected (splitter).

**H. Clock, outside temperature and trip odometer display**

The display is activated when the ignition is switched on.

The clock is shown in the top left-hand section of the display. The standard daylight saving time can be altered on the tachograph. See the tachograph operating manual.

The outside temperature is displayed in the bottom left-hand section. The right-hand side shows the trip odometer. The trip odometer can be reset using the master display, see section 'Menu overview' in the chapter 'Master display'.

### 1. Speedometer display

When the steering wheel switches are used to activate cruise control or to alter the settings, this is visible on the master display. After three seconds the settings disappear on the master display, but they remain visible in the speedometer display.

What is shown are whether the cruise control is activated, the distance setting to the vehicle ahead and whether the downhill speed limiter is active.



### 3. Headlight height adjustment (only available in combination with halogen headlights)

The height setting of the headlights can be adjusted with a thumb wheel. By turning this thumb wheel, the headlights can be directed upwards or downwards.

The headlights only react to changes of the thumb wheel position with the light switch in position 2 (dipped beam is on).

The positions on the thumb wheel are as follows:

- The position marked '0' is the normal position.
- The headlights are directed upwards by turning the thumb wheel to the position marked 'I'.
- As a result of increasing load the headlights will rise. To avoid dazzling oncoming traffic, the headlights can be directed downwards in three steps marked 'II', 'III' and 'IV'.



### 4. Static cornering light

When the vehicle speed is below 40 km/h (19 mph) and the direction indicator is used, the cornering light (in the fog light) on the side of the chosen indicator comes on automatically. Use this switch to turn off this function.



### 5. Work light or loading space light switch

Use this switch to switch the work light on the cabin cross member or the lighting in the loading space on or off.



**NOTE:** The marker lights must be on (light switch in position I).

If the vehicle speed exceeds 30 km/h (25 mph), the work light or loading space light switches off automatically.



### 6. Instrument lighting dimmer

When the ignition is switched on and the marker lights are on, the instrument lighting and the radio display illumination light up.

The lighting and the radio display illumination can be dimmed by turning the thumb wheel.

When the dimmed instrument lighting is on, the lighting cannot be dimmed.



### 7. Dimmed Instrument Lighting

Press this switch to dim all instrument lighting to prevent the obstructive reflection of light from the windows at night.



### 8. Interior lighting on/off switch

Press this switch to extinguish all the interior lighting in the cabin.



*NOTE: When this switch has been activated, the interior lighting remains off, even if the doors are opened.*

### 9. Not used.



### 10. PTO 1 switch

PTO 1 can be an engine PTO or a gearbox PTO. Use this switch to activate or deactivate PTO 1.



*NOTE: This switch has a lock.*



### 11. PTO 2 switch

PTO 2 is a gearbox PTO. Use this switch to activate or deactivate PTO 2.



*NOTE: This switch has a lock.*

## PTO (Power Take Off)



*NOTE: Conditions for switching the PTO on or off depend on the application of the vehicle and thus the programming of the electronic systems. The conditions for switching the PTO on or off differ from the description below. Consult a DAF Service dealer for the conditions for switching the PTO on or off on the vehicle.*

3

### Gearbox PTO

#### Switching on the PTO

1. Depending on the programming, either the park brake must be in the parking position, or it can also be in the driving position.



*NOTE: If the park brake can be in driving position when the PTO is switched on, it is possible to drive in this situation.  
To switch on the PTO the vehicle must be stationary.*

2. Allow the engine to run at idling speed (engine speed below 700 rpm).
3. With a manual gearbox, press the clutch pedal.  
With an AS Tronic gearbox, turn the rotary switch to neutral (N).
4. Switch on the PTO with the PTO switch.  
The PTO warning indicator is activated on the instrument panel when the PTO is engaged.

#### Switching off the PTO

1. The vehicle must be stationary.
2. Run the engine at idling speed.
3. With a manual gearbox, press the clutch pedal.  
With an AS Tronic gearbox, turn the rotary switch to neutral (N).
4. Switch off the PTO with the PTO switch.  
With a manual gearbox, hold the clutch pedal down for another 2-3 seconds (to stop the PTO).  
The PTO warning indicator is deactivated on the instrument panel when the PTO is disengaged.

### Driving with engaged PTO

Driving with the PTO switched on is permitted, provided the maximum PTO speed is not exceeded.

Changing gear when the PTO is engaged is not permitted and, in the case of an AS Tronic gearbox, is not possible.

### Engine PTO

#### Switching on the PTO

1. Allow the engine to run at 650 rpm - 1000 rpm.
2. When driving, the vehicle speed must be less than 50 km/h (31 mph).
3. Switch on the PTO with the PTO switch.  
The PTO warning indicator is activated on the instrument panel when the PTO is engaged.

**Switching off the PTO**

1. Switch off the PTO with the PTO switch.

The PTO warning indicator is deactivated on the instrument panel when the PTO is disengaged.

The engine PTO can be switched off when driving or at vehicle standstill.

**3.3.2 Control panel**

D001771-2

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1 TNR or monitor camera system or storage (version dependent).</li> <li>2 Basic radio or storage.</li> <li>3 Advanced Emergency Braking System (AEBS) on/off switch.</li> <li>4 Adaptive Cruise Control (ACC) on/off switch.</li> <li>5 Adaptive Cruise Control (ACC) distance switch.</li> <li>6 Depending on the version:               <ul style="list-style-type: none"> <li>– Normal driving height switch, air suspension.</li> </ul> </li> </ol> | <ol style="list-style-type: none"> <li>7 – Second driving height switch.</li> <li>8 – Switch for exhausting tandem axle bellows (Australia and New Zealand version only).</li> <li>7 Lane Departure Warning System (LDWS) switch.</li> <li>8 Diesel Particulate Filter (DPF) switch.</li> <li>9 Cover for telephone cradle mounting plate.               <ul style="list-style-type: none"> <li>– A USB connector for charging the mounted telephone is also fitted behind this cover.</li> </ul> </li> </ol> |
|--|---|



10	Depending on the version:	20	Depending on the version:
	– ASR traction aid		– Hydraulic platform engine brake
	– AS Tronic off road		– Engine brake after release accelerator pedal
11	1 <sup>st</sup> trailing axle lift switch (FAK version).	21	Air conditioning switch.
12	Hill Start Aid switch.	22	Recirculation valve switch.
13	Flasher hazard warning lights switch.	23	Depending on the version:
			– Traction aid (all versions except FT low deck)
14	Fan speed control rotary knob.		– Increased manoeuvring level switch (FT low deck)
15	Air distribution rotary knob.	24	Depending on the version:
16	Temperature control rotary knob.		– Inter-axle differential lock switch
17	AS Tronic rotary knob.		– Axle lift (leaf suspension or air suspension)
18	Stop & Go switch.	25	Cross-axle differential lock switch.
19	Hydraulic platform surround lights switch.	26	Menu Control Switch.
		27	Park brake handle.

### 1. TNR or monitor camera system or storage (version dependent)

See section 'Camera system'.

### 2. Basic radio or storage (version dependent)



### 3. Advanced Emergency Braking System (AEBS) on/off switch.

AEBS is preselected on by default. Use this switch to disengage and engage AEBS.



### 4. Adaptive Cruise Control (ACC) on/off switch

ACC is preselected (on) by default (indicator light in the ACC on/off switch is on) when the ignition is switched on. Use this switch to disengage and engage ACC.

See chapter 'Adaptive Cruise Control (ACC)'.



### 5. Adaptive Cruise Control (ACC) distance switch.

This 3-position spring return switch with fixed central position is used to change the distance between the vehicle and the vehicle driving ahead:

- Press the upper part of the switch to decrease the distance to the vehicle ahead.

- Press the lower part of the switch to increase the distance to the vehicle ahead.  
See chapter 'Adaptive Cruise Control (ACC)'.



## 6. Depending on the version:

3

### Normal driving height switch, air suspension

Briefly press this switch and the vehicle reaches its normal driving height.

### Second driving height switch

Press this switch to change the driving height.

This tumbler switch has two positions to regulate two different driving heights, irrespective of the vehicle speed.

This function is optional and can be used if trailers are used with different king pin heights.

### Switch for exhausting tandem axle bellows (Australia and New Zealand version only)

Press this switch to exhaust the tandem axle bellows. Briefly press this switch once again and the vehicle reaches its normal driving height.



## 7. LDWS switch

Press this switch to disengage and engage the LDWS (Lane Departure Warning System). LDWS is on by default.

See section 'LDWS' in the chapter 'Driving'.

## 8. DPF switch

Switch to start or stop, or inhibit regeneration of the Diesel Particulate Filter (DPF).



### Upper side: Initiate regeneration, DPF

See section 'Regenerating DPF' in the chapter 'Driving'.



### Lower side: Stop or inhibit regeneration, DPF

See section 'Regenerating DPF' in the chapter 'Driving'.

### 9. Cover for telephone cradle mounting plate

A USB connector for charging the mounted telephone is also fitted behind this cover. See section 'Installing and removing Bluetooth enabled telephones' in the chapter 'Instruments and controls'.

### 10. Depending on the version:



#### ASR traction control switch

Use this switch to increase the maximum permissible wheel slip. See section 'Anti Slip Regulation' in the chapter 'Driving'.



#### AS Tronic off-road switch

Press this switch to engage or disengage the AS Tronic off-road mode. For more information about driving in the AS Tronic off-road mode, see section 'Off-road mode' in the chapter 'AS Tronic gearbox'.



### 11. First trailing axle lifting system switch (FAK version)

This switch operates the lifting device of the trailing axle (air suspension or leaf suspension).



#### **WARNING!**

– ***Make sure that no one is in the vicinity of the moving axle.***

***Operators are at risk of serious injury if they stand near an axle while it is being raised or lowered.***

The switch has three positions:

#### **Lifting - 0 - Lowering**

##### **Lifting**

- Make sure that no one is in the vicinity of the moving axle.
- Press the upper part of the switch against the spring pressure.
- The air-suspended trailing axle is fully lifted automatically (with sufficient air pressure).
- With a leaf-suspended trailing axle, press the switch and hold it until the trailing axle is fully lifted.

##### **Lowering**

- Make sure that no one is in the vicinity of the moving axle.
- Press the lower part of the switch against the spring pressure.
- The trailing axle lowers automatically.



**NOTE:** For vehicles with an AS Tronic gearbox: the vehicle must be stationary and the gearbox must be in the Neutral (N) position.



### 12. Hill Start Aid

Press this switch to engage or disengage the Hill Start Aid. When Hill Start Aid is engaged the indicator light in the switch is on. See section 'Hill Start Aid' in the chapter 'Driving'.



### 13. Flasher hazard warning lights switch

Use this switch to switch the hazard warning lights on and off. The lighting in the switch indicates that the hazard warning lights are switched on.

### 14. Fan speed control rotary knob

See section 'Heating and ventilation system with air conditioning'.

### 15. Air distribution rotary knob

See section 'Heating and ventilation system with air conditioning'.

### 16. Temperature control rotary knob

See section 'Heating and ventilation system with air conditioning'.

### 17. AS Tronic rotary knob

See chapter 'AS Tronic'.



### 18. Stop & Go switch.

Operate this switch to engage or disengage the Stop & Go function. When this function is active, the Allison automatic gearbox automatically shifts from 'Drive' to 'Neutral' when the foot brake pedal is applied and vice versa.



### 19. Hydraulic platform surround lights switch

Use this switch to switch the surround lights on the hydraulic platform on or off.



## 20. Depending on the version:

### Hydraulic platform engine brake switch

Switch for engine brake after release accelerator pedal



## 21. Air conditioning switch

The air conditioning switch has the following positions:

- Air conditioning switched off; the indicator light (in the switch) is off.
- Air conditioning switched on; the indicator light (in the switch) is on.  
See section 'Heating, ventilation and air conditioning system'.



## 22. Recirculation valve switch

The switch has the following positions:

- Recirculation is switched off, the indicator light (in the switch) is off. Fresh outside air is drawn into the cabin.
- Recirculation is switched on, the indicator light (in the switch) is on. The air in the cabin recirculates.  
See section 'Heating, ventilation and air conditioning system'.

## 23. Depending on the version:



### Traction aid switch (all versions except FT low deck).

Use this switch to engage or disengage traction aid. See section 'Traction aid' in the chapter 'Driving'.



### Increased manoeuvring level switch, FT low deck version.

Use this switch to **temporarily** increase the space between the front of the semi-trailer and the catwalks of the tractor when manoeuvring.



#### **WARNING!**

- ***Make sure that no one is in the vicinity of the moving axle.***

***Operators are at risk of serious injury if they stand near an axle while it is being raised or lowered.***

Activate this function when the vehicle is stationary or at speeds below 3 km/h by briefly pressing this switch.

When this function has been activated, the vehicle lowers automatically:

- After 3 minutes.
- At speeds above 20 km/h.
- When the vehicle is stationary.

The function can be reactivated at any time when the vehicle is stationary or at speeds below 3 km/h.

The level remains raised for another 3 minutes maximum.

The function can also be interrupted by pressing the **Stop** button on the air suspension remote control.

### 24. Depending on the version:



### Inter-axle differential lock switch

Use this switch to activate or deactivate the inter-axle differential lock. See section 'Differential lock' in the chapter 'Driving'.

The differential lock must be activated:

- With the vehicle stationary.
- With the clutch pedal depressed.
- With the gearbox in the Neutral (N) position in the case of vehicles with an automatic/AS Tronic gearbox.



**NOTE:** *This switch has a lock.*



### Trailing axle lifting system switch (leaf suspension or air suspension).

This switch operates the lifting system of the trailing axle with air suspension or leaf suspension.

3



**WARNING!** Operators are at risk of serious injury if they stand near an axle while it is being raised or lowered.

- Make sure that no one is in the vicinity of the moving axle.

The switch has three positions:

#### Lifting - 0 - Lowering

##### Lifting

- Make sure that no one is in the vicinity of the moving axle.
- Press the upper part of the switch against the spring pressure.
- The air-suspended trailing axle is fully lifted automatically (with sufficient air pressure).
- With a leaf-suspended trailing axle, press the switch and hold it until the trailing axle is fully lifted.

##### Lowering

- Make sure that no one is in the vicinity of the moving axle.
- Press the lower part of the switch against the spring pressure.
- The trailing axle lowers automatically.



**NOTE:** For vehicles with an AS Tronic gearbox: the vehicle must be stationary and the gearbox must be in the Neutral (N) position.



### 25. Cross-axle differential lock switch

Use this switch to engage or disengage the cross-axle lock.  
See section 'Differential lock' in the chapter 'Driving'.



**NOTE:** This switch has a lock.

The differential lock must be activated:

- With the vehicle stationary.
- With the clutch pedal depressed.
- With the gearbox in the Neutral (N) position in the case of vehicles with an automatic/AS Tronic gearbox.

### 26. Menu Control Switch

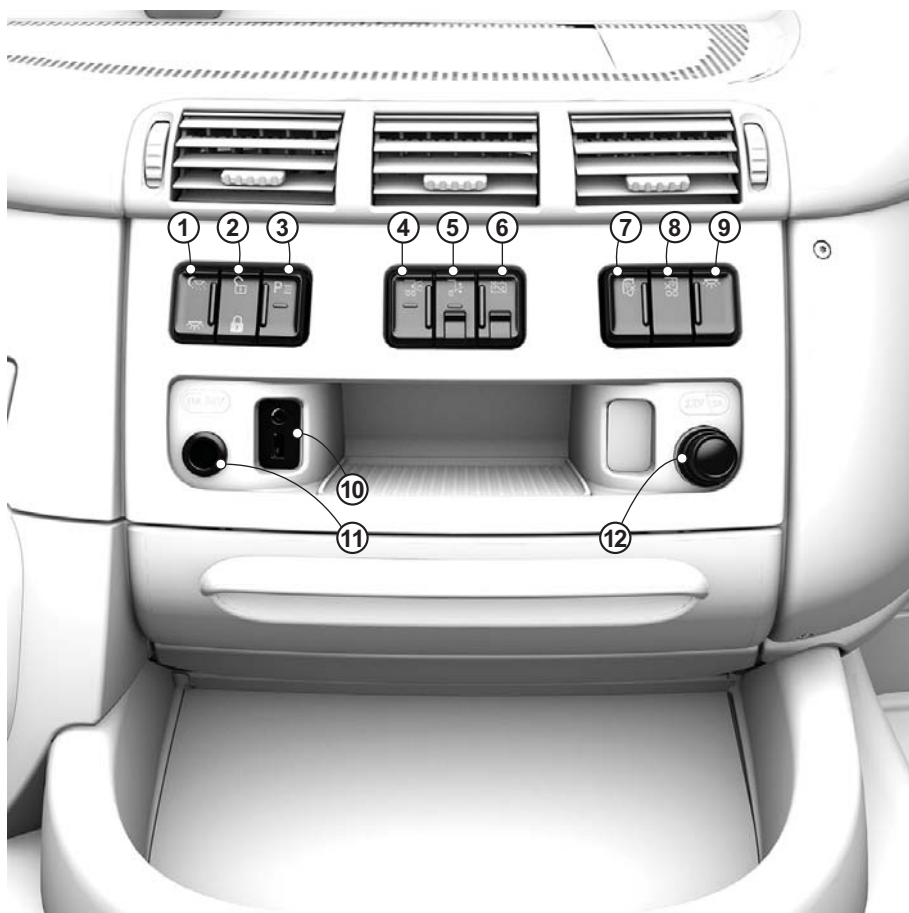
Turn the Menu Control Switch to switch screens in the main menu. When the switch is pressed, the function or information selected is displayed, and subsequently any sub-menus are displayed. See chapter 'Master display'.

## 27. Park brake handle

See section 'Brakes' in the chapter 'Driving'.

3

### 3.3.3 Centre console



D001768-2

1 Night lighting plus interior light switch2

Switch for unlocking co-driver door



3	Auxiliary heater switch	8	Trailer detection off switch
4	Reverse buzzer deactivation switch	9	Interior light switch
5	Cargo lift or fifth wheel lock switch	10	USB/AUX plug 'radio'
6	ADR main switch	11	24V/15A plug connection
7	Cabin interior detection off switch	12	12V/5A lighter



### 1. Upper side: Night lighting

The advantage of this lighting is that barely any obstructive light is reflected on the windows while driving at night.



### 1. Lower side: Interior lighting



### 2. Upper side: unlock co-driver door



### 2. Lower side: lock co-driver door



### 3. Auxiliary heater switch

Use this switch to switch the auxiliary heater on and off. An LED indicates that the auxiliary heater is switched on.



### 4. Reverse buzzer deactivation switch

The reverse buzzer can be switched on or off with this switch when reversing. **Always switch on the reverse buzzer under normal driving conditions.**



### 5. Truck: Fifth wheel lock

The fifth wheel can be locked or unlocked with this switch.



*NOTE: This switch has a lock.*



### 5. Rigid: Cargo lift

The cargo lift can be opened or closed with this switch.



*NOTE: This switch has a lock.*



### 6. ADR main switch

Use this switch to operate the electronic main switch. For more information, see section 'Main switch'.



**WARNING!** *Operating the main switch while driving switches off all electrical systems and the engine. This can lead to very dangerous situations and damage to the vehicle electronics.*

- *Never operate the main switch while driving.*
- *Never operate the main switch while the ignition is on.*



*NOTE: This switch has a lock.*



### 7. Cabin interior detection off switch

See the chapter 'Alarm system'.



### 8. Trailer detection off switch

See the chapter 'Alarm system'.



### 9. Interior light switch (only used in Space Cab version)

Use this switch to switch on the spotlight on the co-driver side.

### 10. USB/AUX connection DAF radio

Consult the radio user manual.

### 11. 24V/15A plug connection (accessory connection)



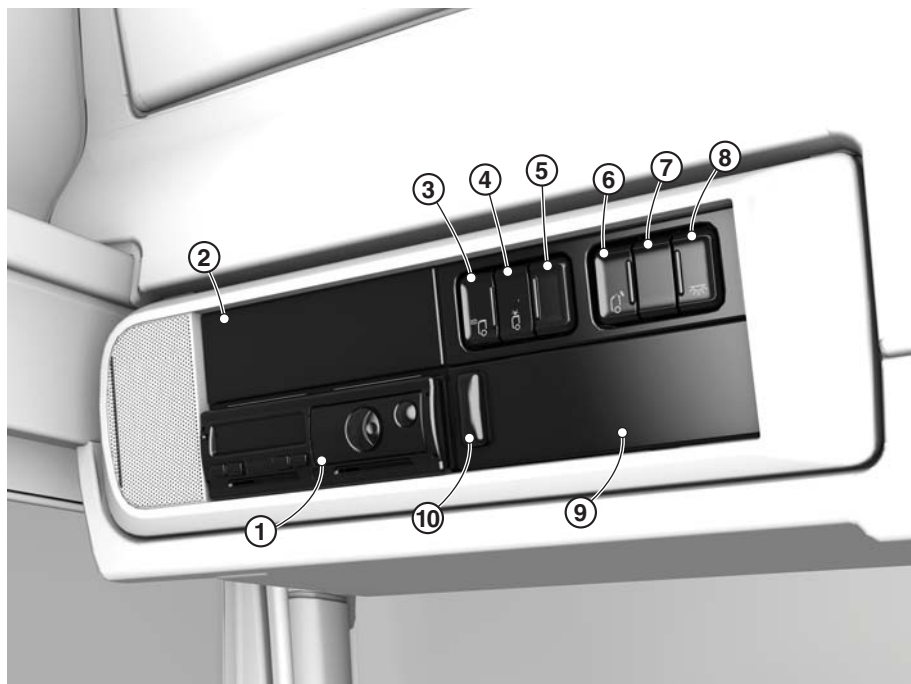
## 12. 12V/5A lighter

Depress the lighter. It springs back automatically when ready for use. If the lighter plug is used to connect accessories, see section 'Accessory plug connectors and air connection'.

3

## 3.3.4 Roof console

### Sleeper Cab and Space Cab



D001838

- |   |  |    |                            |
|---|--|----|----------------------------|
| 1 | Digital tachograph (DTCO)              | 6  | Roof hatch switch          |
| 2 | Customer-specific DIN slot             | 7  | Not used                   |
| 3 | Auxiliary driving light on roof switch | 8  | Interior light switch      |
| 4 | Rotating light switch                  | 9  | Customer-specific DIN slot |
| 5 | Not used                               | 10 | Telephone microphone       |

### 1. Digital tachograph (DTCO)

For more information on the DTCO, see the separate user manual.

**2. Customer-specific DIN slot****3. Auxiliary driving light on roof switch**

Use this switch to make the lights on the roof (sky lights, auxiliary lights) go on when the main beam is activated.

The main beam lights in the headlight do not go on.

**3****4. Rotating light switch**

Use this switch to switch the rotating light on and off at all times.

**5. Not used****6. Roof hatch switch**

Use this switch to open and close the roof hatch electrically.  
See section 'Roof hatch'.

**7. Not used****8. Interior light switch (only used in Space Cab version)**

Use this switch to switch on the spotlight on the co-driver side.

**9. Customer-specific DIN slot****10. Telephone microphone**

## 3.3.5 Bunk panel

3

- 1 Roof hatch switch
- 2 Not used)
- 3 Interior lighting switch, Space Cab version only
- 4 Auxiliary heater timer unit
- 5 Auxiliary heater control unit



### 1. Roof hatch switch

Use this switch to open and close the roof hatch electrically.

See section 'Roof hatch'.

### 2. Not used



### 3. Interior lighting switch, co-driver side

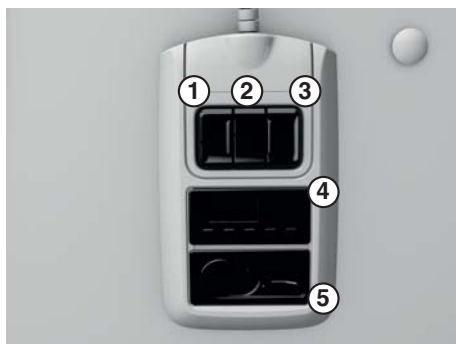
This switch switches in combination with the centre console switch.

### 4. Auxiliary heater timer unit

For more information, see chapter 'Auxiliary heater'.

### 5. Auxiliary heater control unit

For more information, see chapter 'Auxiliary heater'.



D001579

### 3.3.6 Steering Wheel Switches

- A Volume control
- B Scroll function
- C Pick-up call, end call or reject call
- D Downhill Speed Control
- E Variable speed limiter
- F Cruise control or Engine Speed Control

For more information about the telephone operation, see section 'Operating the telephone'.



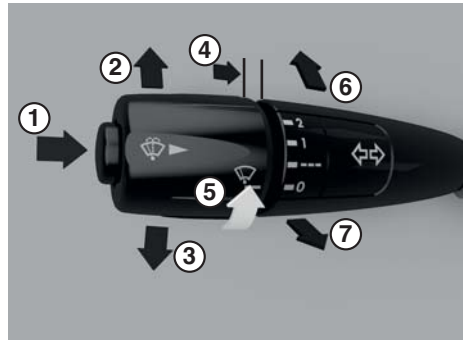
D001523-2

For more information about 'Downhill Speed Control', 'variable speed limiter', 'cruise control' and 'Engine Speed Control', see chapter 'Driving'.

### 3.3.7 Left-hand steering column switch

Centre position (dipped beam, with headlights on)

- 1 Horn switch
- 2 Direction indicators, right
- 3 Direction indicators, left
- 4 Windscreen washers switch
- 5 Windscreen wiper switch
- 0 Wipers off
- - - Intermittent wipe
- 1 Wipers on, low speed
- 2 Wipers on, high speed
- 6 Main beam
- 7 Headlight flash



D001580

#### Horn switch

Press switch (1) to operate the horn.

#### Direction indicators

The direction indicators (2 and 3) only work when the ignition is switched on. To operate the direction indicators briefly when changing lanes, pull the steering column switch back slightly against the perceptible spring pressure. It springs back when released.

### Windscreen washers

The windscreen washers are activated by pressing the spring-operated windscreen washer switch (4). The windscreen washers stop when the switch is released. The windscreen washer is engaged together with the windscreen wipers.

### 3 Headlight washers

If the vehicle is equipped with headlight washers, these washers are only activated when the headlights are switched on.

The headlight washers are activated when the windscreen washer switch (4) is activated for more than 5 seconds. The headlight washers are also activated once every three times that the windscreen washers switch is activated. The switch must be activated for less than 5 seconds.

### Windscreen wipers

The windscreen wipers only work when the ignition is switched on.

The windscreen wipers make one wiper movement when switch (4) is briefly pressed.

### Interval for intermittent wipe

The standard interval is 5 seconds.

The interval can be adjusted between one and 20 seconds using the windscreen wiper switch (5).

Increasing or decreasing the interval:

- Switch on intermittent wipe (position ---).
- **When the windscreen wipers are inactive (wipers fully down)**, turn switch (5) to the zero position (position 0) for a period of two to 20 seconds.
- After 10 seconds (for example), switch intermittent wipe on again (position ---).



D001581

The new interval is now 10 seconds (the time that the switch (5) was in 'position 0').

If the ignition is switched off, or if the intermittent wipe is not switched on for 5 minutes, the interval reverts to the standard interval of 5 seconds.

In winter conditions, to prevent damage to windscreen wipers, always switch off the windscreen wipers before putting the ignition key in the rest position.

### Main beam

The main beam is activated when the headlights (dipped beam) are switched on and the steering column switch is moved forward (6).

## Headlight flash

The headlight flash is activated when the (spring loaded) steering column switch is moved backward (7). The headlight flash goes off when the steering column switch is released.

### 3.3.8 Right-hand steering column switch



D001582

## Steering column switch with manual gearbox

The steering column switch allows the following control functions:

- **Retarder**

The steering column switch can be used to select a specific braking torque.

For more information, see chapter 'Driving'.



D001583

## Steering column switch with AS Tronic gearbox

- C Version with engine brake
- D Version with retarder



The version C steering column switch allows the following control functions:

- **Choice between manual and automatic gearbox operation (standard version only)**  
Select either manual or automatic shifting using the button of the steering column switch.
- **Choice of gear**  
The steering column switch allows manual shifting up or down.
- **Engine brake**  
The steering column switch can be used to activate and deactivate the engine brake.  
When the engine brake is activated via the steering column switch, it deactivates when the accelerator pedal is operated. When the accelerator pedal is fully released, the engine brake is activated again.

The version D steering column switch allows the following control functions:

- **Choice between manual and automatic gearbox operation (standard version only)**  
Select either manual or automatic shifting using the button of the steering column switch.
- **Gear selection**  
The steering column switch allows manual shifting up or down.
- **Retarder**  
The steering column switch can be used to select a specific braking torque.

For more information, see chapter 'Driving' or 'AS Tronic gearbox'.

### 3.3.9 Installing and removing Bluetooth enabled telephones

#### Connecting with the vehicle telephone interface system



*NOTE: It is not possible to enter the telephone setup menu using the Menu Control Switch while driving. Telephone operation is only possible while driving using the steering wheel switches once telephones have been paired and are connected.*

Switch on the ignition. The Bluetooth telephone must now be paired with the telephone interface system.

Use the Menu Control Switch to select the 'Phone' icon in the master display. Select the 'Bluetooth phone' icon, and then select the 'Bluetooth status' icon to enable the Bluetooth connection in the vehicle.

#### Pairing Bluetooth enabled phones

It is possible to pair a maximum of ten telephones via Bluetooth.

- Enable the telephone Bluetooth connection.
- Use the Menu Control Switch to select the 'Phone' icon in the master display.
- Select the 'Bluetooth phone' icon.
- Select the 'Search for phones' icon.

The telephone interface system on the truck searches for available Bluetooth telephones.

- Select the telephone from the list of found telephones.
- Enter the PIN code when prompted.



*NOTE: Use the 'Reverse search' option when the truck fails to locate a Bluetooth-enabled telephone. The vehicle telephone interface system broadcasts the truck chassis number that is detected by a Bluetooth-enabled telephone. Select the truck telephone system from the Bluetooth-enabled telephone and enter the PIN code when prompted.*

When the telephone is paired, the vehicle telephone interface system reads the telephone memory. The newly paired telephone may request permission to read the telephone memory. This may take some time, depending on the type of telephone.

The telephone is now set to be used via the vehicle telephone interface system.



*NOTE: A maximum of ten Bluetooth telephones can be paired with the telephone interface system. Only two telephones can be connected at the same time.*

Depending on the vehicle type, the mobile telephone can be placed into a telephone cradle. The cradle model depends on the type of mobile telephone.

There is a mounting place for the cradle behind the cover in the dashboard. See section 'Control panel'.

Depending on the type of telephone, a cradle may be available from a DAF dealer.



*NOTE: No mounting plate or cradles are available for the LF series.*

### **Removing a Bluetooth paired telephone from the vehicle telephone interface system.**

If no longer required, paired Bluetooth telephones can be removed from the vehicle telephone interface system.

Use the Menu Control Switch to select the 'Phone' icon in the master display. Select the 'Bluetooth phone' icon, and then select the 'Remove phones' icon. Select the telephone to be removed from the list.

### 3.3.10 Activating the truck phone

#### Placing the SIM card in the telephone interface unit

3

Open the fuse box.

Install the SIM card in the slot behind the black cover.



*NOTE: The correct way to insert the SIM card is shown on the sticker placed on the telephone interface unit.*

Close the black cover and the fuse box.



D001757

#### Activating the SIM card

- Use the Menu Control Switch to select the 'Phone' icon in the master display.
- Select the 'truck phone' icon.
- Select the 'Activation' icon.
- Set the truck phone to 'On'.
- Use the Steering Wheel Switches to enter the PIN code when prompted.

The truck phone is now set to be used.



*NOTE: The truck phone is operated using the Steering Wheel Switches. See section 'Operating the telephone using the steering wheel switches'.*

### 3.3.11 Operating the telephone using the steering wheel switches



*NOTE: This chapter explains the functionality of the telephone interface. The pictures shown in this chapter are provided as examples.*

## Incoming calls

When the telephone receives an incoming call, the following information is shown in the master display:

- The telephone provider.
- The icon shows if it is an incoming, outgoing, missed, ongoing or ended call.
- The name of the person calling or being called is shown if it has been saved on the telephone memory in the telephone.
- When the caller has not been programmed but the number is recognised, the number is visible.
- When the number recognition is deactivated by the person calling, a dashed line is visible.
- After the call is accepted, the text 'Incoming call' is replaced by the duration of the call.
- Which of the connected phones is active.



D001587

## Answering calls

Press the 'pick-up call' key (top of switch C) to answer the call, and press the 'end call' key (bottom of switch C) to end or reject the call.



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## Outgoing calls

### Selecting a telephone



*NOTE: This section is only valid when multiple telephones are connected.*

- Press the 'pick-up call' key (C) to see the connected telephones.

- Press the 'scroll' key (B) to select a telephone.
- Then press the 'pick-up call' key (C) again to use the selected telephone.

Telephone numbers, previously dialled numbers or missed calls can be accessed from the selected telephone.

### 3

#### Selecting a telephone number from the telephone book

- Press the 'pick-up call' key (C) to access the selected telephone.
- Press the 'pick-up call' key (C) to open the telephone book of the selected telephone.
- Press the 'scroll' key (B) to select the telephone number or person from the list.
- Press the 'pick-up call' key (C) to make the call.
- Press the 'end call' key (C) to end or abort the call.



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**NOTE:** It is only possible to select one of the last ten numbers dialled or to view missed and received calls.

#### Selecting a previously dialled telephone number or missed call

- Press the 'pick-up call' key (C) to access the selected telephone.
- Press the 'scroll' key (B) to access the missed call, dialled numbers or received calls.
- Press the 'pick-up call' key (C) to access the selected option.
- Press the 'scroll' key (B) to access the telephone number or person from the list.
- Press the 'pick-up call' key (C) to make the call.
- Press the 'end call' key (C) to end or abort the call.

If the 'end call' key is pressed with a master display screen active, the master display goes back one screen at a time.

If no key is pressed for 60 seconds, the information disappears from the master display.

#### Dialling a telephone number



**NOTE:** This function is only available when using the truck phone.

- Select the truck phone. See section 'Selecting a telephone'.
- Press the 'scroll' key (B) to access the 'dial number' option.  
The pop-up screen for entering a telephone number appears.
- Use the 'scroll' key (B) to select a digit, the 'x' for a correction.

- Select the receiver symbol to make the call.
- Press the 'end call' key (C) to end or abort the call.

### Volume control

While making a telephone call, the steering wheel switch (A) is used for volume control. With an outgoing call the volume control is active, even when there is no connection yet. Changing the volume level of the telephone interface system does not affect the volume level setting of the telephone itself.



**NOTE:** The ringtone volume is set in the 'telephone' menu of the master display using the Menu Control Switch (MCS).



D001523-2

### Disconnecting a Bluetooth telephone when leaving the cabin

The telephone can be disconnected as follows:

- Press the 'end call' key to open the connections screen.
- Select the telephone to be disconnected.
- Press the 'pick-up call' key. The telephone is now disconnected.

The telephone can be reconnected as follows:

- Press the 'end call' key to open the connections screen.
- Select the telephone to be reconnected.
- Press the 'pick-up call' key. The telephone is now connected.



**NOTE:** Disconnecting and reconnecting of telephones can also be done in the 'telephone' menu of the master display using the Menu Control Switch (MCS).

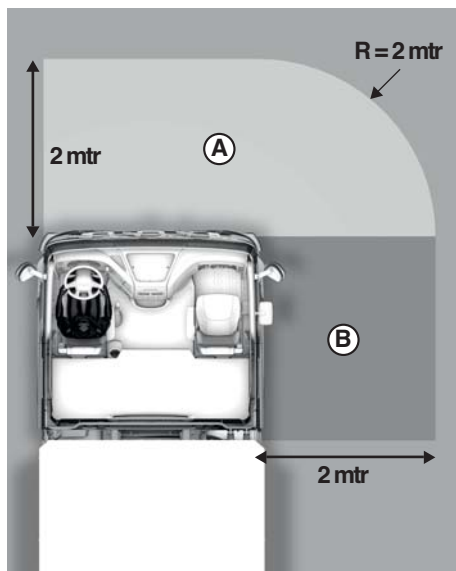
### 3.3.12 Camera system

Ex works, the camera system consists of a front or side view camera and a monitor to visualise those parts outside the visibility field. Extra cameras like a rear view camera, a surveillance camera or a navigation system can also be connected.

## Field of camera vision projected on the ground

- A Front camera  
B Side camera

3



D001711



**WARNING!** *Poor or no visibility around the vehicle leads to dangerous situations and serious injury.*

- *Make sure that the camera and monitor visibility are not obstructed.*

## Camera

The camera is mounted:

- on the front side of the cabin (co-driver side), or
- on the co-driver side behind the door.

## Monitor



**NOTE:** *Objects in the monitor are closer than they appear.*

**Control panel**

- 1 Camera selection key
- 2 Monitor screen on/off key
- 3 Menu enter or exit key
- 4 Escape or back key
- 5 Scroll down/- key
- 6 Scroll up/+ key
- 7 OK/Confirm key



D001672

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**Camera selection**

With the camera selection key (1), it is possible to switch between the connected cameras. The LED next to the camera selection key shows which camera is displayed on the monitor screen.

**Monitor screen on/off**

By pressing the monitor screen on/off key (2), the screen can be switched on or off. When the screen is off, an LED lights up next to the monitor screen on/off key. Under certain circumstances, the monitor screen is automatically activated and cannot be switched off.

When a front camera is mounted, the monitor screen with front view is automatically activated when:

- Vehicle speed is less than 30 km/h.
- the direction indicator on the co-driver side is activated.
- the front camera is activated using the camera selection key.

When a side camera is mounted, the monitor screen with side view is automatically activated when:

- the direction indicator on the co-driver side is activated.
- the side camera is activated using the camera selection key



**NOTE:** Some of these conditions are mandatory in some countries.

**User menu**

The menu can only be activated when the vehicle is at a standstill and the park brake or the foot brake is applied. When the menu is accessible, an LED indicator next to the menu enter or exit key (3) lights up.

By pressing the menu enter or exit key, the on-screen main menu appears. Pressing the menu enter or exit key again exits the main menu.

With the main menu active, a sub menu can be selected by scrolling up or down (keys 5 and 6). The menu can be entered by pressing the OK/Confirm key (7).



With the escape key (4), it is possible to go back one level.

## User menu overview

Main menu	sub menu
<b>Camera settings</b>	<ul style="list-style-type: none"><li>– <b>Camera 1</b> (front view or side view camera)<ul style="list-style-type: none"><li>– Brightness</li><li>– Contrast</li><li>– Saturation</li></ul></li><li>– <b>Camera 2</b> (rear view camera, if mounted)<ul style="list-style-type: none"><li>– Brightness</li><li>– Contrast</li><li>– Saturation</li><li>– Marker</li><li>– Marker position</li></ul></li><li>– <b>Camera 3</b> (optional camera, if mounted)<ul style="list-style-type: none"><li>– Brightness</li><li>– Contrast</li><li>– Saturation</li><li>– Mirror</li><li>– Marker</li><li>– Marker position</li></ul></li></ul>
<b>System settings</b>	<ul style="list-style-type: none"><li>– Language</li><li>– Aftermarket</li><li>– Diagnostics</li><li>– Default settings</li></ul>

## Camera settings

In this menu, different camera settings can be changed according to the table above. Only the connected cameras are shown in this menu.

The monitor contains a light sensor to automatically adapt the monitor screen brightness to the ambient light in the cabin.

## System settings

The language displayed on the screen can be changed.

The menus 'Aftermarket' and 'Diagnostics' are used for service and are not accessible to the driver. These menus are locked with a code.

In the menu default settings, all settings will be reset to the ex-factory settings.

## 3.3.13 Main switch

The main switch is either mechanically or electronically operated, depending on the vehicle version.

The switch can be used to **interrupt** the power supply from the **batteries** to the **vehicle** (with the exception of the tachograph).

**NOTE:**

- **First switch off the ignition and wait 80 seconds before switching off the main switch.** The after-run phase EAS (Emission Aftertreatment System) must have ended before operating the main switch. Never use the main switch as ignition switch.
- Switch off the engine before operating the main switch.
- Switch off the auxiliary heater first. The after-run phase of the heater must have ended before operating the main switch.
- Use the main switch when the vehicle is parked and left unattended.



**WARNING!** Operating the main switch while driving will switch off all electrical systems and the engine. This can lead to very dangerous situations and damage to the electronics of the vehicle.

- **Never operate the main switch while driving.**
- **Never operate the main switch when the ignition is on.**

## Electronic main switch

The electronic main switch does not switch off at once when it is operated; this happens with a 10-second delay. This is to allow the after-running of various electrical systems on the vehicle.

The electronic main switch (usually located close to the battery pack).



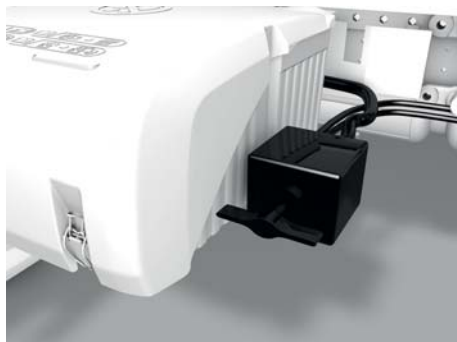
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There is also a switch on the centre console in the cabin.

### Mechanical main switch

Mechanically operated main switches only have a switch outside the cabin.



D001585

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## 3.4 RADIO

### 3.4.1 Basic radio

#### Controls

If the DAF basic radio is installed in the vehicle, it is possible to use the steering wheel switches to control the radio.



**CAUTION:** *Operating the radio while the vehicle is in motion can result in a distraction from the road and traffic conditions. It is possible to lose control of the vehicle combination. Only operate the radio if the traffic conditions allow it.*

For operating the radio see the radio manual.

In this document only the specific DAF functionalities are described.

#### Input connections

The input connections are combined in the centre console.

The connection for audio streaming is placed near the ashtray, see section 'Centre console'.

#### USB Connections

Using the USB connection near the ashtray, close to the radio, it is possible to connect a USB storage device to the radio.

MP3 and WMA audio formats are recognised and played via the radio.

To select the USB input, use the source button on the radio until the name of the USB device is displayed.

The USB connection also has a 500 mA power supply. It can be used to charge the connected device, such as an MP3 player or a mobile phone.



**NOTE:** The radio does not support Apple® devices, such as an iPod® or iPhone®.

When fitted, the USB connection on the other side has a 1.8 A power supply. It can only be used to charge connected devices, such as an MP3 player or a mobile phone. See section 'Centre console'.

### Auxiliary connection

To connect an audio device to the radio, the auxiliary (AUX) connection can be used. This connection is located near the USB connection in the centre console, close to the radio.

The audio device can be connected with a stereo 3.5 mm jack plug.

To select the AUX input, use the source (SRC) button on the radio until 'AUX' is displayed.

### Mute

The output sound of the radio is automatically muted in three situations:

- When a Forward Collision Warning is active; a buzzer inside the DIP is activated. See section 'Forward Collision Warning' in the chapter 'Adaptive Cruise Control'.
- When the Lane Departure Warning System is active; the sound of the LDWS is produced via the speakers of the audio system. See section 'Lane Department Warning System' in the chapter 'Driving'.
- When the telephone is operated, the sound of the telephone is routed through the audio system. See section 'Operating the telephone' in the chapter 'Instruments and controls'.

## Display

### Display illumination

The radio display and controls are illuminated for night-time viewing.

Dimming the vehicle interior lights also dims the lights of the radio display and controls.

### Information on the master display

It is possible to see some of the radio features such as:

- Radio station information.
- Volume adjustment.

For more information on how the information is displayed, see chapter 'Master display'.

## 3.4.2 Truck Navigation Radio (TNR)

### Controls

If the Truck Navigation Radio (TNR) is installed in the vehicle, it is possible to use the steering wheel switches to control the radio.



**WARNING!** Operating the Truck Navigation Radio (TNR) while the vehicle is in motion can result in a distraction from the road and traffic conditions.

*It is possible to lose control of the vehicle combination.  
Only operate the TNR if the traffic conditions allow it.*

3

For operating the TNR, see the radio manual.

In this document only the specific DAF functionalities are described.

### Input connections

The input connections are combined in the centre console.

The connection for audio streaming is placed near the ashtray, see section 'Centre console'.

### USB Connections



**NOTE:** Using the USB connection near the ashtray, close to the radio, is it possible to connect a USB storage device to the radio.

*The TNR supports audio streaming of Apple® devices, such as an iPod® or iPhone®.*

MP3, WMA or Apple® audio formats are recognised and played via the radio.

To select the USB input, use the source button on the radio until the name of the USB device is displayed.

The USB connection also has a 500 mA power supply. It can be used to charge the connected device, such as an MP3 player or a mobile phone.

When fitted, the USB connection on the other side has a 1.8 A power supply. It can only be used to charge connected devices, such as an MP3 player or a mobile phone. See section 'Centre console'.

### Auxiliary connection

To connect an audio device to the radio, the auxiliary (AUX) connection can be used. This connection is located near the USB connections in the centre console. See section 'Centre console'.

The audio device can be connected with a stereo 3.5 mm jack plug.

To select the AUX input, use the source (SRC) button on the radio until 'AUX' is displayed.

### Bluetooth

Via the Bluetooth connection the TNR can play music tracks stored on a Bluetooth device.

Connecting a Bluetooth audio device to the TNR is done in the 'Setup' menu of the TNR; see the separate TNR manual for details.

To select the Bluetooth input, use the 'Media' button on the TNR until the name of the Bluetooth device is displayed.



**NOTE:** It is not possible to use the TNR as a hands-free car kit. For this purpose use the telephone interface. See section 'Operating the telephone' in the chapter 'Instruments and controls'.

## Mute

The output sound of the radio is automatically muted in three situations:

- When the Forward Collision Warning is active, a buzzer inside the DIP is activated. See section 'Forward Collision Warning' in the chapter 'Adaptive Cruise Control'.
- When the Lane Departure Warning System is active; the sound of the LDWS is produced via the speakers of the audio system. See section 'Lane Department Warning System' in the chapter 'Driving'.
- When the telephone is operated, the sound of the telephone is routed through the speakers of the telephone interface system. See section 'Operating the telephone' in the chapter 'Instruments and controls'.

## Navigation

The TNR contains a navigation system. This system can be controlled via the TNR controls.

For operating the navigation system, see the radio manual.



**WARNING!** It is not allowed to operate the navigation while the vehicle is in motion. This can result in a distraction from the road and traffic conditions.

**It is possible to lose control of the vehicle combination.  
To set the navigation, STOP the vehicle at a safe place.**

It is possible to set some vehicle parameters in the TNR. The TNR navigates the vehicle so that it can reach its destination without any narrow streets or other traffic difficulties.

These parameters are:

- Vehicle (combination) width.
- Vehicle (combination) length.
- Vehicle (combination) height.
- Vehicle (combination) weight.
- Transportation of dangerous goods (ADR).

## Display

### Display illumination

The TNR display and controls are illuminated for night-time viewing.

Dimming the vehicle interior lights also dims the lights of the TNR display and controls.

### Information on the master display

It is possible to see some of the radio features such as:

- Radio station information.
- Volume adjustment.

3

For more information on how the information is displayed, see chapter 'Master display'.

### 3.5 CABIN CLIMATE CONTROL

#### 3.5.1 Heating ventilation and air conditioning system

There are two types of systems:

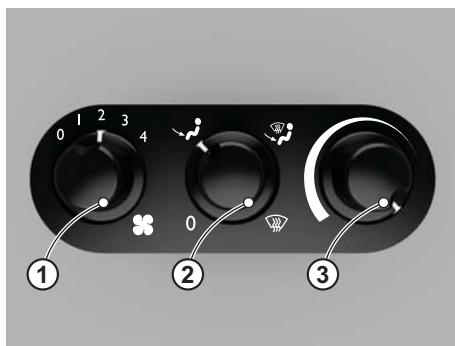
- Standard heating and ventilation system
- ATC system

The ATC (Automatic Temperature Control) system controls the cabin temperature. ATC is short for Automatic Temperature Control; the selected set temperature is thermostatically controlled with the aid of sensors.

The heating, ventilation and air conditioning system consists of a control panel, air vents and air outlet openings and an air conditioning system.

#### Control panel

##### Standard heating and ventilation system



D001673-4

## ATC system



D001674-4

3

### Fan speed rotary knob

Operate the knob (1) to adjust the fan speed.

The fan has four speed positions and a zero setting (fan off).

### Air distribution rotary knob

Adjust the air distribution using rotary knob (2).

### Temperature control rotary knob

Adjust the cabin temperature using rotary knob (3).

## Air vents and outlet openings

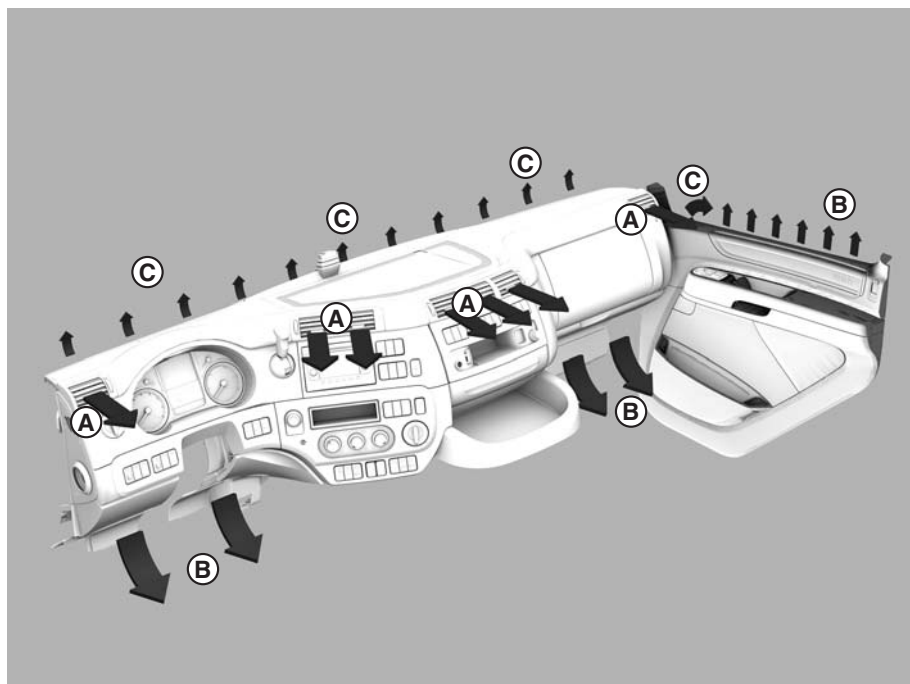
### Air distribution

The heating and ventilation system is provided with a large number of air vents and outlet openings for:

- demisting or defrosting the windscreen and side windows
- heating the cabin.

The air vents and outlet openings located in the dashboard, the footwell area and the doors can be controlled with the air distribution rotary knob.





D001804

### Air distribution rotary knob positions:

0

#### 0 position

In this position air flows through air vents A. Air outlet openings B and C are closed (footwell area and windscreen).



#### Footwell area

In this position air flows through the outlet openings B and air vents A. Air outlet openings C are closed (windscreen).



#### Windscreen and footwell area

In this position air flows through the air outlet openings B, C and air vents A.



#### Windscreen

In this position air flows through the air outlet openings C and air vents A. Air outlet openings B are closed (footwell area)

The air distribution rotary knob can also be placed between two positions.



*NOTE: Air from the air vents on centre console is always cold air.*

### Adjustable and controllable air vents

In the dashboard there are also air vents allowing the volume and direction of incoming air to be adjusted. These vents allow heated or cooled air into the cabin. The volume of air flowing through the vents can be controlled by turning the knurled wheels on the air vents.

### Cabin air recirculation

The supply of fresh outside air can be almost fully shut off. This may be desirable to prevent undesired odours from penetrating into the cabin, for example.

**Switch on the recirculation for short periods only to prevent the air quality from degrading and moisture from increasing.**



The supply of outside air can be almost fully shut off with the recirculation valve switch.

#### Using the cabin air recirculation

- Switch depressed: the indicator light (in the switch) lights up and the warning indicator on the instrument panel is illuminated.  
Recirculation is switched on. The supply of outside air is almost fully shut off. The air in the cabin is recirculated in the cabin.
- Switch **not** depressed: The indicator light is off.  
Recirculation is switched off. The recirculation valve is open and fresh outside air is drawn in.

### Air conditioning system

The air conditioning is controlled independently of the heating and ventilation system.



The air conditioning system can be switched on and off by using the switch on the control panel.

#### Using the air conditioning

- When the air conditioning is in use, the windows must remain closed for good performance.
- To reduce the temperature quickly, first use the maximum air speed. Later, the air speed can be reduced.
- Make sure that neither you nor the passengers feel any direct cold or draught. Do not aim the air vents directly at the body.

3

- Make sure that the temperature difference between the inside and outside of the cabin does not exceed 5 to 6°C when you leave the cabin. You are therefore advised to switch off the air conditioning towards the end of the journey.
- Remember that the air conditioning consumes power and so increases fuel consumption.
- To protect the battery and starter motor when starting the engine, make sure that the air conditioning is switched off before ignition. Therefore, switch off the air conditioning before you switch off the engine.
- Regularly (once a month) switch on the air conditioning briefly, even if cooling is not required (for example in winter). This prevents damage to the system (including compressor blockage).



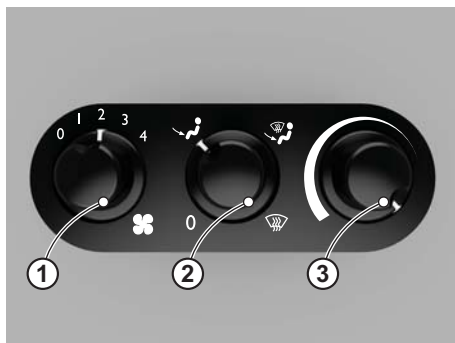
**WARNING!** The air conditioning system contains refrigerant under high pressure. Removal of any parts of the air conditioning system or other activities can cause burns or serious injury.

- Do not remove any parts of the air conditioning system.
- Only qualified personnel are allowed to work on the air conditioning system.
- If the air conditioning fails to work, have it repaired by a DAF Service dealer as soon as possible to avoid further damage to the system.

## Operating the heating, ventilation and air conditioning system

Only the operation of the standard heating and ventilation system is described. The operation of the ATC system is the same.

### Heating



D001673-4

- Set rotary knob 3 as desired in the red area.
- Set rotary knob 2 to a position where the required air vents are activated.
- Select the desired volume of outgoing air with rotary knob 1.

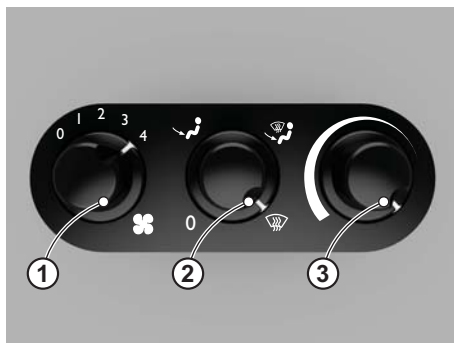
- Open the side vents as required by turning the knurled wheels, and adjust the outflow direction as required.
- Open the air vents in the centre console as required so that unheated outside air flows into the interior, and adjust the flow direction as required. Direct the air flow out of the air vents in the centre console in an upward direction.

To obtain a higher temperature faster when temperatures outside are low, switch on the recirculation by closing the recirculation valve. In damp weather conditions, reopen the recirculation valve after heating, to prevent the windows from misting.

### Windscreen demisting

- Set knob 1 to position 4.
- Set knob 2 to windscreen position.
- Set knob 3 to 'maximum' in the red area.
- Close the side vents and centre console vents.

While heating, it is possible to use the air conditioning to remove moisture from the incoming air in the cabin. This has the advantage of demisting the glass more quickly.

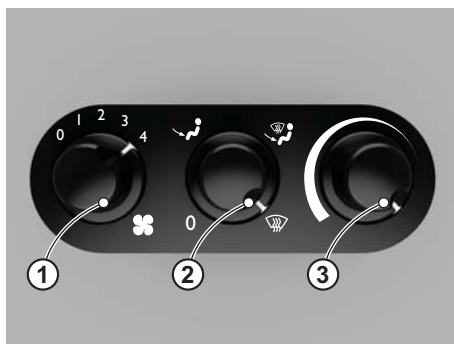


D001681-2

### Windscreen defrosting

- Set knob 1 to position 4.
- Set knob 2 to windscreen position.
- Set knob 3 to 'maximum' in the red area.
- Close the side vents and centre console vents.

For faster heating at low outside temperatures, switch on the recirculation. In damp weather conditions, reopen the recirculation valve after heating, to prevent the windows from misting and air quality from degrading.

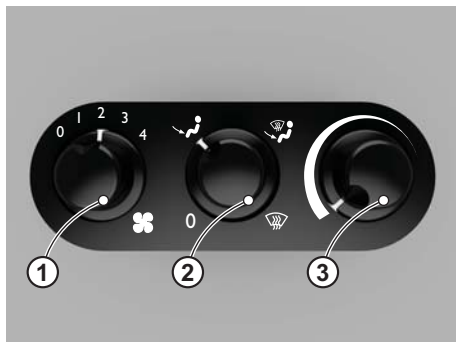


D001681-2

## Ventilation

3

- Set knob 3 to the far left position (blue area).
- Use knobs 1 and 2 to admit outside air via the air vents along the windscreen, the side windows and the footwell area into the cabin.
- Air from outside is allowed into the interior through the air vents on the centre console and the air vents near the side windows. The volume of incoming air can be controlled with the knurled wheels on the air vents.



D001714-2



**NOTE:** Ventilation is very important for comfort inside the cabin. Not just while driving, but also when spending the night in the cabin. If the night is spent in the cabin, ventilate by opening the roof hatch, for instance.

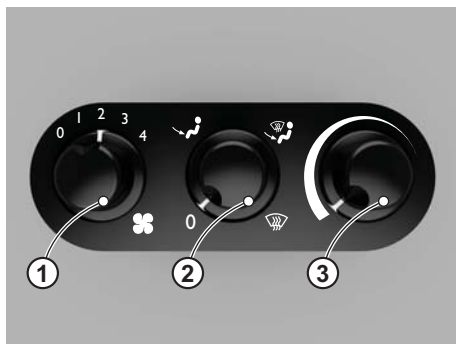
## Cooling

- Switch on the air conditioning.
- Switch on the recirculation as required.
- Select the required air volume using knob 1.



**NOTE:** When the air conditioning is switched on and the fan knob is in position '0', the fan speed is automatically activated to speed '1'.

- Set rotary knob 2 to position '0'.
- Set knob 3 to the desired position. For maximum cooling, set the knob to the far left position in the blue area.
- Open the side vents and centre console vents.



D001667-2

To achieve faster cooling, switch on the recirculation. Reopen the recirculation valve after a short period, to prevent the air quality from degrading and demisting.

### 3.5.2 Auxiliary heater (air heater)



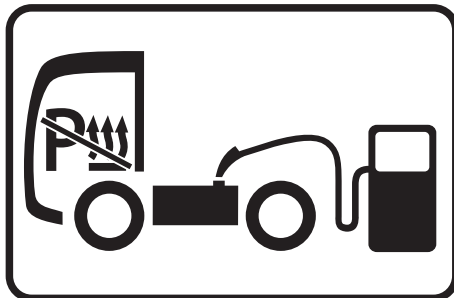
**WARNING!** Fuel fumes contacting a source of heat can cause an explosion and serious injury.

- Switch off the auxiliary heater when filling the tanks with fuel!



**WARNING!** Exhaust gases of an operational auxiliary heater contain carbon monoxide, an invisible, odourless, but highly toxic gas. Inhalation of these gases may cause unconsciousness and death.

- Switch off the auxiliary heater when the vehicle is parked in a confined space.



D001862

The auxiliary heater controls the temperature in the cabin and the speed of the auxiliary heater fan.

The auxiliary heater operates independently of the cabin heater and the ignition setting.

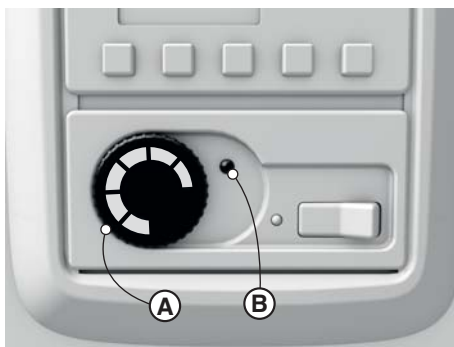


**NOTE:** Switch off the auxiliary heater when leaving the cabin for a prolonged period of time.

**The control unit for the auxiliary heater is located on the rear cabin wall. The controls include:**

- A rotary switch for the temperature setting
- B green indicator LED

- The auxiliary heater can be switched on with the switch in the centre console.
- Set the rotary switch (A) on the control panel to the 'hot air' position. The green indicator LED (B) lights up to indicate that the cabin thermostat control is active.
- With the rotary switch, the desired temperature can be set.



D001675

## Faults

In some cases a fault can be reset by switching off the switch and then quickly switching it on again.

If the fault cannot be reset, have the auxiliary heater checked by a DAF Service dealer.

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**NOTE:** To prevent faults during cold weather, switch on the auxiliary heater for 10 to 15 minutes once a month during the summer.  
If necessary, install a separate fuel tank for the auxiliary heater.

### 3.5.3 Auxiliary heater (water heater)



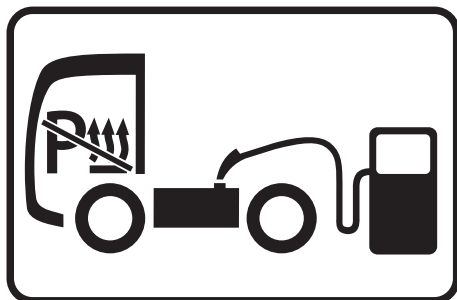
**WARNING!** Fuel fumes contacting a source of heat can cause an explosion and serious injury.

- Switch off the auxiliary heater when filling the tanks with fuel!



**WARNING!** Exhaust gases of an operational auxiliary heater contain carbon monoxide, an invisible, odourless, but highly toxic gas. Inhalation of these gases may cause unconsciousness and death.

- Switch off the auxiliary heater when the vehicle is parked in a confined space.



D001862

The auxiliary heater fulfils the following functions:

- Pre-heating and maintaining a set temperature in the cabin and/or engine, with a non-running engine.
- Additional heating of the cabin interior in extreme cold or when the cabin heater cannot heat the cabin (engine idling for a long period).

The auxiliary heater is connected to the engine coolant circuit.

The heat is fed to the cabin through the existing heat exchanger (heater fan) and the hot air channels of the vehicle.



**NOTE:** Switch off the fan heating and ventilation system and the auxiliary heater when leaving the vehicle for a long period of time.

## Heating the cabin

- The auxiliary heater is switched on using the switch in the centre console.
- To activate the auxiliary heater, the temperature control on the heating and ventilation panel of the cabin heater must be on maximum.



**NOTE:** If the vehicle is equipped with ATC, the rotary switch (B) must be set to maximum. In this way, ATC controls the temperature.

- Set the heater fan speed control on the heating and ventilation panel of the cabin heater to setting 1 or 2.
- Set the switch (D) on the control panel in the rear wall to the 'hot air' position. The green warning lamp (C) lights up, which indicates that the cabin thermostat control is active.
- Set the rotary switch (B) to the desired temperature. Temperature sensor (A) on the rear wall measures the cabin temperature.



D001676



**NOTE:** Power consumption is very high when the fan speed control is in positions 3 and 4. Avoid these positions when the engine is switched off.

## Pre-heating the engine

- Set the heater fan speed control on the heating and ventilation panel of the cabin heater to position '0'.
- Turn the rotary knob for air distribution on the heating and ventilation panel of the cabin heater to position '0'. All the vents are now closed.
- The auxiliary heater can be switched on with the switch in the centre console.
- Set switch (D) on the control panel mounted in the rear wall to position '0'. The green warning lamp (C) goes off, which indicates that the cabin thermostat control is not active (only the engine is pre-heated).



**NOTE:** The heater fan operates independently of the ignition key position when the auxiliary heater is in use.



## Faults

In some cases a fault can be reset by switching the switch on the centre console off and then quickly on again.

If the fault cannot be reset, have the auxiliary heater checked by a DAF Service dealer.

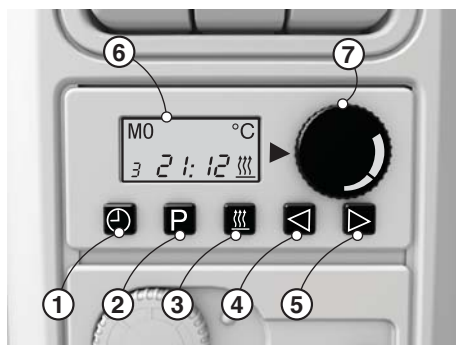
3



**NOTE:** To prevent faults during cold weather, switch on the auxiliary heater for 10 to 15 minutes once a month during the summer.  
If necessary, install a separate fuel tank for the auxiliary heater.

## 3.5.4 Auxiliary heater (timer unit operation)

1. Time setting
2. Program selection
3. On/off
4. Decrease setting
5. Increase setting
6. Display
7. Rotary switch for temperature setting



D001677

## Setting time and day

1. Hold down button (1) until the display starts to flash (after approximately 3 seconds).
2. Set the time with the buttons (4) and (5). Once the time has stopped flashing, it has been stored.
3. The day starts flashing.
4. Set the day with the buttons (4) and (5).
5. Press button (1), or wait until the day has stopped flashing. The setting procedure is complete.

## Switching the auxiliary heater on and off

### Switching on the heater

Before the auxiliary heater can be switched on, the time and date must be set.

1. Briefly press button (3). The display (6) shows the burner symbol with the time and day. The heating comes into operation.
2. Set the required temperature using the temperature rotary switch (7). The setting range lies between 10°C and 30°C.

### Switching off the auxiliary heater

1. Press the button (3). The display and button illumination are switched off.
2. The heater fan remains in operation for a few minutes to cool the heater.

## Programming the timer unit

The auxiliary heater timer unit has a memory into which three different pre-selection times can be programmed. The pre-selection time can be pre-programmed up to seven days in advance.

### Selecting a memory store

The pre-selection time must be programmed in a memory store.

1. Press the button (2) once for the first memory store. Digit 1 and the default time setting (12.00) appear in the display.
2. Press the button (2) twice for the second memory store. Digit 2 and the default time setting (12.00) appear in the display.
3. Press the button (2) three times for the third memory store. Digit 3 and the default time setting (12.00) appear in the display.
4. Press button (2) as often as necessary until the memory display disappears.



**NOTE:** It is not possible to select more than one memory store at the same time.

### Deselecting the memory store

Press button (2) until the memory store is cleared from the display. Now, no pre-selection time is active.

### Programming the pre-selection time

1. Select a memory store.
2. Briefly press button (4) or (5). The time starts flashing.
3. Set the desired switch-on time with the buttons (4) and (5). Setting is only possible when the time flashes. The switch-on time has been stored in the memory when the time is no longer flashing.
4. After approximately 5 seconds, the day begins to flash. Set the day with the buttons (4) and (5). Programming is completed when the display shows the current time.
5. The activated memory store is visible in the display. The burner symbol is also illuminated to indicate that a switch-on time has been programmed.

### Changing the operating time permanently

The operating time is the time the heater is in operation during the pre-selection time. When this time has elapsed, the timer unit switches off the auxiliary heater.

1. The heater must not be running.
2. Press and hold button (4) until the set operating time flashes.
3. Release the button (4).
4. Set the desired standard operating time using the buttons (4) and (5) (from 10 - 120 minutes). When the set operating time disappears, it has been stored.

### Faults

The burner symbol flashes when there is a fault in the auxiliary heater. In some cases a fault can be reset by switching off the heating with button (3) and then switching it quickly on again.

3



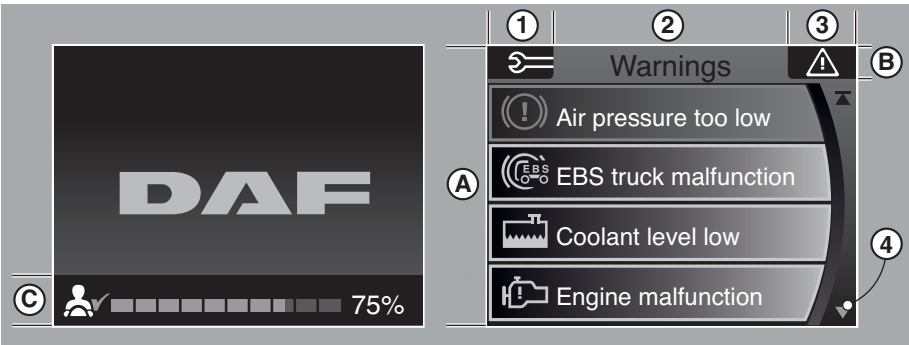
## 4.1 GENERAL

The master display is part of the Vehicle Intelligence Centre (VIC-3). The master display consists of two different fields: an indication bar and an interactive and dialogue area.

In the interactive and dialogue area, messages can be displayed to show warnings and information regarding the function and operation of the various systems. These messages are displayed as pop-up screens.

In addition, the system contains a Menu Control Switch (MCS) and a buzzer.

## 4.2 MASTER DISPLAY



D001661-3

- |   |  |   |   |
|---|--|---|---|
| A | Interactive and dialogue area.                         | 2 | Menu title. If selected via the Menu Control Switch (MCS) or the Steering Wheel Switches (SWS). |
| B | Indication bar.  | 3 | Warning indicators. See section 'Warning indicators on master display'.                         |
| C | Driver Performance Assistant (DPA) status bar.         | 4 | Scroll function available.  |
| 1 | Symbols of selected menu. See section 'Menu overview'. |   |   |

In the interactive and dialogue area various information can be displayed such as;

- System warnings. See section 'System warnings'.
- Information and settings.
- Main menu. See section 'Menu overview'.

Depending on the displayed information, the background colour of the screen is;



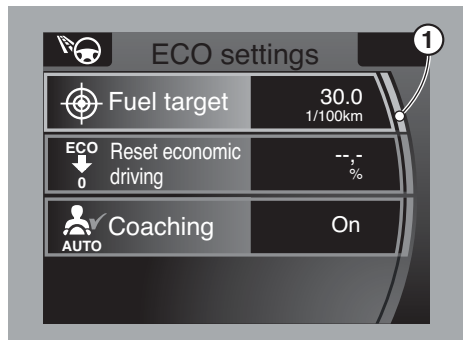
4

D001664

- Red (danger).  
These messages show information that requires immediate action by the driver and they cannot be suppressed.
- Yellow (warning).  
These messages show information that requires action as soon as possible and they can be suppressed.
- Blue (settings).  
These messages show information about settings and the values of these settings.
- Grey (information).  
These messages show information about the status (engaged or disengaged) of systems.
- Green (Driver Performance Assistant).  
These messages show information about the driver performance. See section 'Driver Performance Assistant (DPA) in chapter 'Driving'.



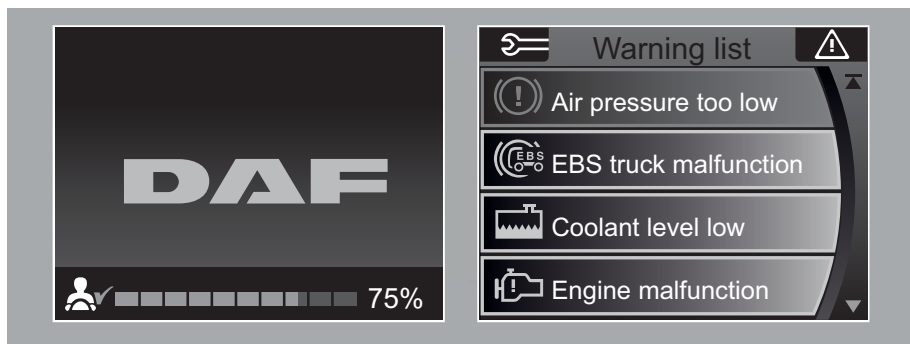
**NOTE:** If additional information on the settings is available or the settings can be adapted, an extra marker (1) is added to the right of the selected topic.



D001665-2

### 4.3 START-UP PHASE

4



D001663-2

If the ignition has been switched on and the engine is not yet running, the start-up screen is shown in the master display.

On start-up, the DAF logo appears in the master display and the following warning indicators on the instrument panel light up:

- MIL (yellow).
- Retarder (green).
- Park brake (red).
- Low brake performance (red).
- Truck EBS (yellow).
- Airbag (yellow).

Approximately 3 seconds after switching on the ignition, all warning indicators disappear except the park brake warning, the MIL and those indicating a malfunction. At the same time, the Driver Performance Assistant (DPA) status bar appears in the master display.

About 2.5 seconds after starting the engine, if faults are present, the system warnings start popping up. The red pop-ups appear first, followed by the yellow pop-ups. With the pop-up screens the 'general warning' indicator and an acoustic signal are activated.

After all the pop-ups have been displayed, the master display automatically switches to the warning list in the service info menu.

If there are red as well as yellow pop-ups, a red hazard warning triangle is displayed in the top right-hand corner of the master display.



**NOTE:** When there are more warnings than fit the display, this is indicated by arrows on the right side of the display. The warnings are displayed in order of priority. This means that the most important warning is displayed first.

Turning the Menu Control Switch (MCS) brings up the hidden ones. An arrow with a line attached to it indicates the beginning or end of the list.



*NOTE: A red warning cannot be removed from the screen when the engine is running.*

*The red warnings can be suppressed by pressing the Menu Control Switch when the engine is not running. This allows selection of other menu options. The warning always reappears after returning to the main screen. A continuous acoustic signal accompanies a red warning.*



*NOTE: Yellow warnings can be suppressed at any time.*

*A pulsating acoustic signal accompanies a yellow warning and sounds four times.*

4

The red hazard warning triangle in the top right-hand corner of the master display remains active at all times.



*NOTE: If the safety belt or safety belts are not fastened after the engine has been started, the red warning indicator 'Fasten safety belt' comes on. At the same time a grey pop-up screen is displayed. Both of them disappear as soon as the safety belt or safety belts are fastened. They reappear when a safety belt is loosened while the engine is still running.*

*If the warning is ignored the pop-up disappears but the warning indicator remains on.*



*NOTE: The vehicle is equipped with a park brake warning system. If the driver's door is opened while the engine is switched off and the park brake is not applied, an acoustic signal is given and a warning symbol is shown on the instrument panel.*



## 4.4 MENU CONTROL SWITCH (MCS)

4



D001837

By pressing the Menu Control Switch (MCS) from a black screen, the main menu is opened.

Turn the MCS to switch between options in the main menu.

By pressing the MCS, the selected option is entered and sub menu 1 appears. See section 'Menu overview'.

Turn the MCS to browse through the options in sub menu 1.

By pressing the MCS, the option is entered. Depending on the selected option, either sub menu 2 or the information and setting screen appears.

If a second sub menu is present, the information and setting screens are opened by entering one of the displayed options. See section 'Menu overview'.

Scroll through the various options in the information screens by turning the MCS.

Change the values in the setting screens by turning the MCS.

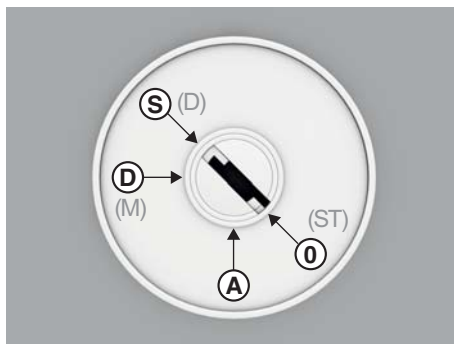
Select an option or confirm a value by pushing the MCS.

Use the 'Exit' key under the MCS to go back in the menus.

A short press to go back to the main menu and a long press to close the menu.



**NOTE:** With the ignition key in the accessory position (A) only a limited number of functions is active on the main menu.





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## 4.5 MENU OVERVIEW






**NOTE:** To go back to the main menu, briefly press the 'Exit' key under the Menu Control Switch. Hold down the 'Exit' key for 2 seconds to exit the menu.


Main menu	sub menu 1	sub menu 2	Information & settings
	Oil level		<ul style="list-style-type: none"> <li>– Actual oil level indication</li> <li>– Refill indication</li> <li>– No data available</li> <li>– Date of last measurement</li> </ul>
	Air supply		<ul style="list-style-type: none"> <li>– Actual air pressure circuit 1</li> <li>– Actual air pressure circuit 2</li> </ul>
	Soot filter information	Soot filter	<ul style="list-style-type: none"> <li>– Actual soot level DPF filter</li> <li>– Status DPF switch</li> <li>– Duration indication of regeneration process</li> </ul>
		Safety instructions	<ul style="list-style-type: none"> <li>– Instructions on how to start a regeneration safely</li> </ul>
	Turbo pressure		<ul style="list-style-type: none"> <li>– Turbo pressure bar graph (0 - 3 bar)</li> </ul>


Main menu Driving support	sub menu 1	sub menu 2	Information & settings
	Economic driving	Eco performance	<ul style="list-style-type: none"> <li>– Total</li> <li>– Anticipation</li> <li>– Efficient wear</li> <li>– Average fuel</li> </ul>
		Fuel consumption	<ul style="list-style-type: none"> <li>– Current fuel consumption</li> <li>– Recent 15 minutes</li> <li>– Average fuel</li> <li>– Distance</li> </ul>
		Eco settings	<ul style="list-style-type: none"> <li>– Fuel target</li> <li>– Reset Eco driving</li> <li>– Coaching</li> </ul>
		Tips & tricks	<ul style="list-style-type: none"> <li>– Various information accessible by selecting the icon on the picture using the Menu Control Switch (MCS). Opening the information by pushing the MCS.</li> </ul>
	Adaptive Cruise Control (ACC)		<ul style="list-style-type: none"> <li>– Actual speed of the vehicle ahead</li> <li>– Actual distance setting to the vehicle ahead</li> </ul>

Main menu Driving support	sub menu 1	sub menu 2	Information & settings
	Power Take Off (PTO)		<ul style="list-style-type: none"> <li>– Total hours PTO-1</li> <li>– Total hours PTO-2</li> <li>– Fuel consumption PTO</li> </ul>
	Axle load		<ul style="list-style-type: none"> <li>– Axle load information truck</li> <li>– Reset truck payload</li> <li>– Axle load information trailer or semi-trailer</li> <li>– Reset payload trailer or semi-trailer</li> </ul>

Main menu Service info	sub menu 1	sub menu 2	Information & settings
	Warning list		<ul style="list-style-type: none"> <li>– All active system warnings</li> </ul>
	Next service		<ul style="list-style-type: none"> <li>– Date</li> <li>– Mileage</li> </ul>
	VIN number (Vehicle Identification Number)		
	Total fuel		<ul style="list-style-type: none"> <li>– The total amount of fuel used since the vehicle went into service.</li> </ul>

Main menu	sub menu 1	sub menu 2	Information & settings
Telephone			
<div></div> <div><b>NOTE: Not accessible when driving</b></div>			
	Truck phone	<ul style="list-style-type: none"><li>– (De)activation</li><li>– Reading SMS</li><li>– Selecting network</li></ul>	
	Bluetooth phone	<ul style="list-style-type: none"><li>– Connections</li><li>– Search for phones</li><li>– Bluetooth status</li><li>– Remove devices</li></ul>	
	Phone volume	<ul style="list-style-type: none"><li>– Ringtone volume</li><li>– Sleep mode on/off</li></ul>	

Main menu Settings	sub menu 1	sub menu 2	Information & settings
	Alarm & clock		<ul style="list-style-type: none"> <li>– Alarm on/off</li> <li>– Set alarm time</li> <li>– Set local time</li> <li>– DIP active time (local, home)</li> <li>– Clock settings (12h, 24h)</li> </ul>
	Language		<ul style="list-style-type: none"> <li>– List of available languages</li> </ul>
	Units		<ul style="list-style-type: none"> <li>– Temperature (°C, °F)</li> <li>– Distance (km, miles)</li> <li>– Fuel consumption (l/100 km, km/l)</li> <li>– Pressure (bar, psi)</li> </ul>
	Dim settings		<ul style="list-style-type: none"> <li>– Coupling the dashboard lights dim function with the reverse gear.</li> </ul>
	Speed control		<ul style="list-style-type: none"> <li>– Coupling Cruise control with downhill speed control</li> <li>– EcoRoll on/off</li> </ul>

Main menu Trip info	sub menu 1	sub menu 2	Information & set- tings
	Trip 1		<ul style="list-style-type: none"><li>– Distance</li><li>– Time</li><li>– Average speed</li><li>– Total fuel con- sumption</li><li>– Average fuel consumption</li><li>– Reset</li></ul>
	Trip 2		<ul style="list-style-type: none"><li>– Distance</li><li>– Time</li><li>– Average speed</li><li>– Total fuel con- sumption</li><li>– Average fuel consumption</li><li>– Reset</li></ul>

4.6 SYSTEM WARNINGS

General

System warnings are displayed in a pop-up text screen followed by a post-warning indicator.

This post-warning indicator is identical to the information screen selected using the Menu Control Switch (MCS).

Serious fault

A **red warning pop-up** is activated on the master display when there is a serious fault. When a red warning pop-up is activated, it displays;



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- A red hazard warning triangle.
- A text explaining the fault.



- The corresponding icon or the word 'STOP'.



*NOTE: The word 'STOP' appears when the park brake is not activated. In this situation the vehicle can move.*

*The icon appears when the park brake is activated. Therefore the vehicle is stationary.*

*A red warning pop-up can only be suppressed for the period it takes to look for additional information in the master display menu.*

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At the same time an acoustic signal activated.



**CAUTION:** *If the red warning pop-up appears and/or the buzzer is audible while driving, there is a serious fault. Depending on the type of fault, it can result in serious damage to the vehicle. The vehicle may behave differently from normal.*

- **Stop the vehicle immediately while observing extra caution.**
- **Park the vehicle in a safe place and switch off the engine.**
- **Have a DAF Service dealer correct the problem as soon as possible.**

## Less serious fault

If there is a less serious fault, a **yellow warning pop-up** and a short acoustic signal are activated. The yellow warning pop-up displays;

- A yellow hazard warning triangle.
- A text explaining the fault.
- The corresponding icon.

When yellow warnings appear on the master display, you may continue driving, but take action at the first opportunity to remedy the fault. Have a DAF Service dealer correct the problem as soon as possible.



**CAUTION:** *The vehicle may behave differently than usual with a yellow warning activated.*

- **Drive the vehicle with extra caution.**
- **Have a DAF Service dealer correct the problem as soon as possible.**



*NOTE: A yellow warning pop-up can be suppressed.*



*NOTE: All system warnings can be viewed in the warning list of the master display menu. The warnings are shown starting with the most urgent one. The warning list is opened using the Menu Control Switch (MCS). If there are more warnings than lines in the menu, the scroll function is active.*

Together with a system warning, a warning indicator can be activated. See section 'Warning indicators on master display'.

## 4.7 WARNING INDICATORS ON MASTER DISPLAY

### General

These icons are used as warning indicators on the instrument panel and as part of master display screens.

The warning indicators on the instrument panel have a fixed colour. See section 'Warning indicators on instrument panel'.

If an icon is displayed as part of a master display screen its colour is defined by the background colour of the screen. See section 'Master display'.



#### **Park brake not applied**

If the driver's door is opened while the engine has been switched off and the park brake has not been applied, an acoustic signal is given and a warning symbol is shown on the master display.



*NOTE: On the master display this warning can be changed from red to yellow by a DAF Service dealer. The indicator on the instrument panel remains red.*



**EBS system failure in the EBS system of the truck. See section 'Brakes' in the chapter 'Driving'.**



**EBS system failure in the EBS system of the trailer. See 'Brakes' in chapter 'Driving'.**



**This warning can give the following text descriptions:**

#### **1. Air pressure too low.**

This warning is visible when the pressure in one of the service brake circuits is less than 5 bar.

#### **2. Air supply system malfunction.**

#### **3. Low brake performance.**

See 'Brakes (Brake performance monitoring)' in chapter 'Driving'.



#### **Oil pressure too low**

Switch off the engine immediately.

Check the engine oil level. See 'Engine oil level' in chapter 'Inspections and maintenance'.



#### **Cabin lock is open**

Check if the cabin is fully tilted back. See 'Tilting the cabin' in chapter 'Emergency repairs'.



## DPF (soot filter)

This warning is activated when the soot level in the Diesel Particulate Filter (DPF) is (too) high or the soot filter is contaminated or the EAS system malfunctions. See section 'Regenerating the DPF' in the chapter 'Driving'.



## High Exhaust System Temperature (HEST)

When regeneration is in progress and the exhaust gas temperature reaches levels that can potentially harm bystanders or the surrounding area, this indicator is shown.



## Emission failure

Engine power is derated up to 50%.

Derate is only activated or deactivated at vehicle standstill.

The engine is derated under the following conditions:

1. **Emission level is above the legal limits.**
2. **Malfunction of the EAS system.**



**This warning symbol can give the following text descriptions:**

1. **AdBlue level low or AdBlue tank empty.**

Fill up the AdBlue tank. See 'Refuelling diesel and AdBlue' in chapter 'Driving'.

2. **Incorrect AdBlue.**

Replace the incorrect AdBlue. See 'Refuelling diesel and AdBlue' in chapter 'Driving'.

3. **AdBlue dosing malfunction**

See 'Refuelling diesel and AdBlue' in chapter 'Driving'.



*NOTE: When this warning is active, the MIL appears, the engine power is derated and eventually the vehicle speed is limited. After refilling the AdBlue tank, this warning, the MIL, engine derate and speed limit are switched off. A small quantity of AdBlue remains in the AdBlue tank even if the **AdBlue tank empty** warning symbol is active.*



**This warning symbol is related to the EAS system and can give the following text descriptions:**

1. **Speed limit at next standstill.**

The speed limit is activated the next time the vehicle stops.

2. **Speed limit 20 km/h (or 12 mph).**

The vehicle speed is limited to 20 km/h or 12 mph.



## Coolant level too low

1. **Coolant level low.**

See 'Topping up coolant' in chapter 'Inspections and maintenance'.

2. **Coolant level sensor.**



### Coolant temperature too high

This warning symbol is visible when the temperature of the coolant exceeds the maximum permissible value. Check the following points:

**1. The coolant level. Caution – danger of scalding.**

See 'Topping up coolant' in chapter 'Inspections and maintenance'.

**2. The poly-V-belt and water hoses.**

**3. The fan clutch.**



### Alternator warning

Alternator charge voltage not correct.

If the charging voltage of the alternator rises above 30 V, this warning symbol is shown. The battery voltage is then too high and the battery may start to boil. In this case, switch on as many electrical consumers as possible.

**If the symbol is still not extinguished, do not continue to drive under any circumstances!**



### Steering circuit warning

**1. Power steering malfunction.**

Check the power steering fluid level. See 'Weekly inspections' in chapter 'Inspection and maintenance'.

**2. Steering circuit 2 malfunction.**

Check the power steering fluid level. See 'Weekly inspections' in chapter 'Inspection and maintenance'.

**2. Rear axle steering (EMAS) malfunction.**



### Engine warning.

**1. Engine warning.**

**2. Engine overspeed.**

**3. Overheated starter motor.**

The starter motor is inoperative for 15 minutes.

**4. Engine shutdown.**

See 'Engine idle shutdown' in chapter 'Driving'.

**5. Accelerator pedal warning.**



*NOTE: Depending on the fault, the engine can switch over to emergency control.*



### This warning symbol can give the following text descriptions:

**1. Transmission warning**

When the vehicle has an AS Tronic gearbox, depending on the malfunction, the gearbox can only be shifted manually.

**2. Transmission temperature too high**

When the vehicle has an AS Tronic gearbox, the gearbox can only be shifted manually.



**This warning symbol can give the following text descriptions:**

**1. Central vehicle controller.**

Fault in the electronics of the VIC (Vehicle Intelligence Centre). The VIC gathers information and actuates vehicle functions.

**2. Configuration error.**

The programmed chassis numbers in the electronics of the engine and the immobiliser do not match.



**Oil level too low**

**1. Oil level sensor.**

Malfunction of the oil level control sensor.

**2. Oil level low or oil level high.**

The warning symbol remains active for 40 seconds.

Check the engine oil level. See 'Engine oil level' in chapter 'Inspections and maintenance'.



**Drive-off gear too high warning**

The current drive-off gear is too high. Select the first or second gear for driving off.

See 'Clutch protection' in chapter 'Manual gearbox ZF'.



**This warning symbol can give the following text descriptions:**

**1. Clutch overload.**

See 'Clutch protection' in chapter 'AS Tronic gearbox'.

**2. Clutch wear.**



**This warning symbol can give the following text descriptions:**

**1. No lines detected.**

Lane Departure Warning System (LDWS) is switched on but is passive because no lines are detected.

**2. LDWS switched off.**

LDWS is switched off by operating the LDWS switch on the control panel.

**3. LDWS malfunction**

LDWS has detected a system malfunction.



**ABS trailer warning**

Faulty trailer ABS system. See the section 'Brakes' in the chapter 'Driving'.



**ABS/EBS trailer not connected**

This warning symbol is activated when the trailer ABS/EBS connector is not connected.



This warning symbol can give the following text descriptions:

**1. Retarder warning.**

There is a fault or the oil temperature in the retarder exceeds the maximum value.

**2. Retarder active.**

Switch off the retarder. Also see chapter 'Driving'.

The retarder is engaged and the accelerator pedal is depressed.



**Alarm system warning**

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This warning symbol can give the following text descriptions:

**1. PTO 1 warning.**

**2. PTO 2 warning.**

This warning is activated if:

- the PTO was active and is switched off, not by the PTO operation switch or other 'switch off' conditions (for example, low system air pressure), or
- the PTO is not deactivated within a defined time after the PTO is switched off using the PTO operation switch or by the 'switch off' conditions (for example, park brake released), or
- the PTO was already active when the ignition was switched on.

**3. PTO 1 not active.**

**4. PTO 2 not active.**

This warning is activated if:

- the PTO is not active within a defined time after the PTO 'switch on' command is received (by the PTO control switch or another request) and all the 'switch on' conditions are fulfilled, or
- the PTO was active and is switched off based on the PTO status switch or the PTO 'switch off' conditions while the PTO operation switch is in the 'on' position.



**Brake lining wear truck**

This symbol lights up if the brake pad on one or more wheels is worn.



**Greasing system warning**

Fault in the Automatic Greasing System. Check the grease level.



**Vehicle Stability Control**

Fault in VSC (Vehicle Stability Control)



This warning symbol can give the following text descriptions:

1. Grid heater active.
2. Grid heater system.



### Airbag warning

See section 'Airbag safety instructions' in the chapter 'Warnings and safety regulations'.



### Fasten safety belt



This warning symbol can give the following text descriptions:

1. Body warning.
2. Pressure failure.
3. Oil temperature.
4. Body unlocked.



### Body Builder Module malfunction.

Text depends on vehicle configuration.



### Drain fuel filter

Clean the active carbon water separator. See chapter 'Inspections and maintenance'.



This warning symbol can give the following text descriptions:

1. Hill Start Aid active.
2. Brake release.

See 'Hill Start Aid' in the chapter 'Driving'



This warning symbol can give the following text descriptions:

### 1. Air suspension

Defect or fault in the air suspension system ECAS (Electronically Controlled Air Suspension). The vehicle may not be driven further if the normal driving height on both sides of the vehicle cannot be maintained. For example, a defective air bellow.

See chapter 'Air suspension'.

### 2. ACC system switched off

The vehicle is not at normal driving height (air suspension) above 40 km/h.

See 'Engaging and Disengaging Adaptive Cruise Control (ACC)' in chapter 'Adaptive Cruise Control (ACC)'.



This warning symbol can give the following text descriptions:

**1. ACC system warning.**

See 'ACC system warning' in chapter 'Adaptive Cruise Control (ACC)'.

**2. ACC system switched off.**

See 'Engaging and Disengaging Adaptive Cruise Control (ACC)' in chapter 'Adaptive Cruise Control (ACC)'.

**3. ACC sensor dirty.**

See 'Radar sensor ACC' in chapter 'Adaptive Cruise Control (ACC)'.

## System capability warning

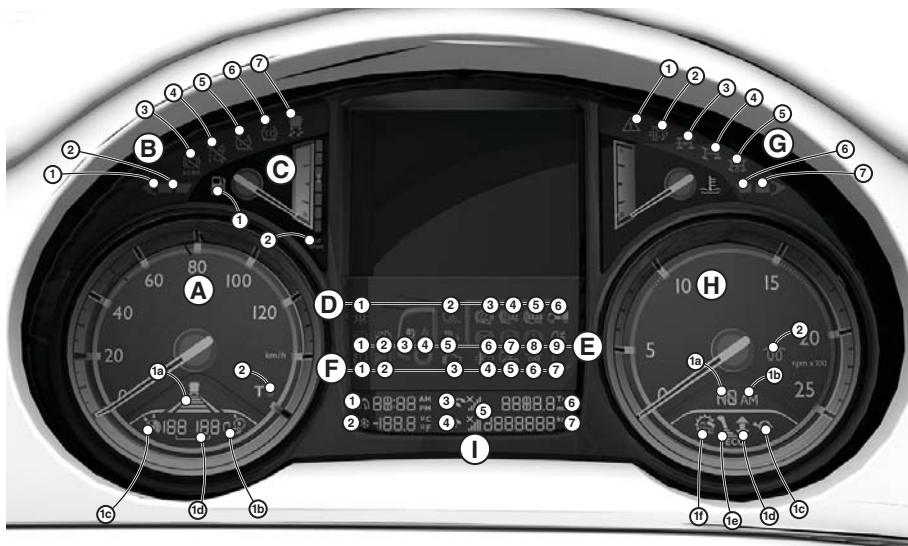
If ACC (Adaptive Cruise Control) is not able to maintain a safe distance to the vehicle ahead, the '**Distance**' warning is activated on the information screen of the master display. The driver must assist the vehicle braking by using the service brake.

See chapter 'Adaptive Cruise Control (ACC)'.



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## 4.8 WARNING INDICATORS ON INSTRUMENT PANEL



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A1	Speedometer display	E9	Rear fog lights
A1a	ACC following distance	F1	Front fog lights
A1b	Downhill speed control	F2	Not used
A1c	Cruise control or speed control	F3	MIL indicator
A1d	Cruise control and downhill speed control coupled	F4	High Exhaust System Temperature (HEST)
A2	Tachograph warning	F5	Chassis not at normal driving height
B1	Left direction indicator, truck	F6	Axle lift
B2	Left direction indicator, trailer	G1	General warning
B3	AEBS off	G2	Diesel Particulate Filter (DPF)
B4	Lane departure warning system off	G3	Inter-axle differential lock
B5	Traction control off	G4	Cross-axle differential lock
B6	Traction control	G5	PTO
B7	Vehicle Stability Control	G6	Right direction indicator, trailer
C1	Fuel level low	G7	Right direction indicator, truck
C2	AdBlue level low	H1	Tachometer display
D1	Bulb failure	H1a	Selected gear
D2	Work light	H1b	Manual/automatic
D3	Hill Start Aid	H1c	Manoeuvre mode
D4	ABS truck	H1d	Gear up/down
D5	ABS trailer	H1e	ECO
D6	General body warning	H1f	Off road
E1	Main beam	H2	Grid heater
E2	Daytime running lights off	I1	Clock/alarm
E3	Airbag	I2	Temperature/frost warning
E4	Safety belt reminder	I3	AM/PM
E5	Splitter low	I4	Celsius/Fahrenheit
E6	Retarder active	I5	Connected phones
E7	Park brake	I6	Trip
E8	Low brake performance	I7	Mileage

### A1. Speedometer display

The cruise control settings are visible in the speedometer display.

See section 'Instrument panel' in the chapter 'Instruments and controls'.

### A2. Tachograph fault

Consult the tachograph user manual.



### B1. Left direction indicator, truck

This warning indicator flashes together with the truck direction indicators.

**B2. Left direction indicator, trailer**

On a truck and trailer (semi-trailer) combination, this warning indicator flashes together with the trailer direction indicators (semi-trailer).

**B3. Advanced Emergency Brake System (AEBS)**

This warning indicator is visible when AEBS is switched off.

**B4. Lane Departure Warning System off**

This warning indicator is visible when LDWS cannot detect any lines or the LDWS switch was operated to disable or a malfunction is detected.

**B5. Traction control off**

This warning indicator is visible when the traction control is switched off by the driver.

**B6. Traction control**

This warning indicator starts flashing when the ASR system intervenes. See section 'Anti Slip Regulation' in the chapter 'Driving'.

**B7. Vehicle Stability Control (VSC)**

This warning indicator flashes when the VSC system intervenes. When this warning indicator remains on, there is a fault in the system. See section 'Vehicle Stability Control' in the chapter 'Driving'.

**C1. Fuel level low**

This warning indicator is visible when the reserve fuel level is reached. The fuel reserve is about 10% of the tank capacity. Refuel as soon as possible.

**C2. AdBlue level low**

This warning indicator turns red when a critical AdBlue level is reached. The system starts giving warnings on the master display. Refill as soon as possible. See section 'Refuelling diesel and refilling AdBlue' in the chapter 'Driving'.

**D1. Bulb failure**

This warning indicator is visible when a light bulb fails. Replace the defective bulb immediately.

**D2. Work light**

This warning indicator is visible when the work light on the cabin cross member or the lighting in the loading space is on.

**D3. Hill Start Aid**

This warning indicator is visible when the Hill Start Aid is active.

**D4. ABS truck**

This warning indicator is visible when the ignition is switched on, and will disappear after 3 seconds. When this warning indicator remains visible there is an ABS system failure in the ABS system of the truck.

**D5. ABS trailer**

This warning indicator is visible when the ignition is switched on and a trailer with ABS system is attached. The indicator will disappear after 3 seconds. When this warning indicator remains visible there is an ABS system failure in the ABS system of the trailer.

**D6. General body warning****E1. Main beam**

This warning indicator is visible when the main beam is switched on or when the main beam flash is operated with the left-hand steering column switch.

**E2. Daytime running lights off**

This warning indicator is visible when the daytime running lights are switched off.

**E3. Airbag warning****E4. Safety belt reminder**

**E5. Splitter low**

This warning indicator is visible when the **low** splitter position of the gearbox is engaged (half gear change).

**E6. Retarder active**

This warning indicator is visible when the retarder is active.



*NOTE: The retarder indicator is not visible when the retarder is active during third brake integration or a speed reduction by ACC (Adaptive Cruise Control).*

**E7. Park brake**

This warning indicator is visible when the park brake is applied, or when the pressure in the air supply system is too low to release the park brake.

**E8. Low brake performance**

See section 'Brakes' in the chapter 'Driving'.

**E9. Rear fog lights**

This warning indicator is visible when the rear fog lights are switched on.

**F1. Front fog lights**

This warning indicator is visible when the front fog lights are switched on.

**F2. Not used****F3. MIL indicator**

This warning indicator is visible when the emission level is above the legal limits.

The function of this indicator is checked as follows:

- Contact on and the engine not running.
- The indicator lights up for 5 seconds, goes off for 10 seconds and on again for 5 seconds. This is the so called bulb and system check.

- Then after 5 seconds the indicator starts to flash for 1 second with a waiting period of 5 seconds.
  - Any other flash pattern indicates a failure.
- Consult the nearest DAF Service dealer for assistance.

During a trip and depending on the warning, the indicator flashes or remains on to indicate a failure. Consult the nearest DAF Service dealer for assistance.

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*NOTE: Due to legislative requirements, it may be a criminal offence to continue driving the vehicle with the MIL indicator indicating a failure.*



#### **F4. High Exhaust System Temperature**

This indicator is shown when:

- A regeneration is in progress and the exhaust gas temperature reaches values which potentially can be harmful to bystanders or the surrounding area and the vehicle speed is below a certain value.
- The exhaust gas temperature reaches values that can potentially be harmful to bystanders or the surrounding area and
- The vehicle speed is below a certain value.



#### **F5. Chassis not at normal driving height**

This warning indicator is visible when the chassis is not at normal driving height.



#### **F6. Axle lift**

This warning indicator is visible if the trailing axle is lifted.



#### **G1. General warning**

This warning indicator is visible when there is a fault in a vehicle system. The master display shows which vehicle function has triggered the warning.



#### **G2. Diesel Particulate Filter**

When the soot level in the DPF or soot filter is (too) high, or the filter is contaminated, this warning indicator is visible.



#### **G3. Inter-axle differential lock**

This warning indicator is visible when the inter-axle differential lock is active.

See section 'Differential lock' in the chapter 'Driving'.

**G4. Cross-axe lock**

This warning indicator is visible when the cross-axe lock is active. See section 'Differential lock' in the chapter 'Driving'.

**G5. PTO**

This warning indicator is visible when the PTO is active.

**G6. Right direction indicator, trailer**

On a truck and trailer (semi-trailer) combination, this warning indicator flashes together with the trailer direction indicators (semi-trailer).

**G7. Right direction indicator, truck**

This warning indicator flashes together with the truck direction indicators.

**H1. Tachometer display**

The gearbox settings are visible in the tachometer display. See section 'Instrument panel' in the chapter 'Instruments and controls'.

**H2. Grid heater**

This warning indicator is visible when the grid heater is active.

## 4.9 OVERVIEW OF SYSTEM ABBREVIATIONS

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Abbreviation	Explanation	Function
ACC	Adaptive Cruise Control	The function of Adaptive Cruise Control is to maintain a preset following distance behind vehicles driving slower than the set speed of the activated cruise control. This is done by limiting the vehicle driving power, and if necessary, requesting vehicle braking power.
ACH-EA	Auxiliary Cabin Heater - Eberspächer Air	This is the auxiliary air heater. The auxiliary air heater (Airtronic) is used for: <ul style="list-style-type: none"> <li>– preheating the cabin interior,</li> <li>– heating the cabin interior,</li> <li>– heating the cabin interior in conditions in which the engine produces too little heat to keep the cabin at the desired temperature.</li> </ul>
ACH-EW	Auxiliary Cabin Heater - Eberspächer Water	This is the auxiliary water heater. The auxiliary water heater (Hydronic 10) is used for: <ul style="list-style-type: none"> <li>– heating the engine,</li> <li>– preheating the cabin interior,</li> <li>– heating the cabin interior,</li> <li>– heating the cabin interior in conditions in which the engine produces too little heat to keep the cabin at the desired temperature.</li> </ul>
ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route	This is a European directive on the transport of hazardous substances by road. When the main switch is used, the earth connection of the electrical system is interrupted.
AEBS	Advanced Emergency Braking System	Warns the driver of the distance and/or time to collision with the preceding vehicle. Activates the brake system, if necessary.

Abbrevia- tion	Explanation	Function
AGS	Automatic Greasing System	This is the automatic greasing system. The automatic greasing system simultaneously greases the connected greasing points on the vehicle.
ALS-S	Alarm System - Scorpion	This is the alarm system. The alarm system is a break-in and theft protection system that reacts to a number of signals. The (input) signals that can set off the alarm come from various sensors and switches. This enables differentiation between exterior and interior protection.
ATC	Automatic Temperature Control	This is the automatic temperature control. The ATC heater unit maintains a constant temperature inside the cabin during a trip.
BBM	Body Builder Module	This is the body builder module. The body builder module gathers body builder-related information and actuates vehicle functions.
CAN	Controller Area Network	This is the CAN network. When data is transferred via the CAN network, all data is transferred over two wires, regardless of its volume or diversity.
CDS-4	Central Door locking System - version 4	This is the central door locking system. The purpose of the central door locking system is to simultaneously lock all the doors of the vehicle.
DIP-5	DAF Instrument Panel - version 5	This is the instrument panel. The DAF instrument panel provides the driver with information via indicators and/or the master display.
DTCO	Digital Tachograph	This is the digital tachograph. The tachograph records driving and rest times, the distance travelled and speed on a tachograph card. It also transmits the vehicle speed to other vehicle systems.



Abbreviation	Explanation	Function
EAS-3	Emissions Aftertreatment System - version 3	<p>This is the Emission Aftertreatment System.</p> <p>The Emission Aftertreatment System consists of: DOC (Diesel Oxidation Catalyst), DPF (Diesel Particulate Filter), SCR (Selective Catalytic Reduction), AMOX (Ammonia Diesel Oxidation Catalyst) for the reduction of NOx and PM.</p>
EBS-3	Electronic Brake System - version 3	<p>This is an electronically controlled brake system.</p> <p>An electronic control unit controls the output pressure to the brake cylinders.</p> <p>To calculate the necessary brake pressure, the electronic control unit receives various signals from the sensors.</p>
ECAS-4	Electronically Controlled Air Suspension system - version 4	<p>This is an electronically controlled air suspension system.</p> <p>The two main functions of the electronically controlled air suspension system are:</p> <ol style="list-style-type: none"> <li>1. Adjustment of the chassis height when loading and unloading. This control maintains a constant vehicle height independent of the load.</li> <li>2. Adjustment of the air suspension while driving. The chassis height is automatically controlled while the vehicle is being driven.</li> </ol>
ELC	Electronic Light Controller	Controls the interior and exterior lighting and the lighting of the connected trailer.
EMAS	Electro-hydraulic Multi-Axle Steering	<p>This is the electro-hydraulic co-steering trailing axle.</p> <p>Below a specific speed, the electro-hydraulic co-steering trailing axle follows the steering movement of the front axle so as to obtain a smaller turning circle.</p>

Abbreviation	Explanation	Function
EST-52	ZF intarder, type: EST 52	The intarder is a wear-resistant, hydraulic continuous brake. It is primarily intended for use in prolonged braking, for example when decelerating from high speed on a level road or when driving downhill. This reduces service brake wear.
FMS	Fleet Management System	Information can be exchanged between the vehicle and the home base using the Fleet Management System.
HD-OBD	Heavy-Duty On-board Diagnostics	This is used to check compliance with agreements relating to emissions monitoring.
LDWS	Lane Departure Warning System	The LDWS system warns the driver when the vehicle unintentionally departs from its lane.
MCS	Menu Control Switch	This is the Menu Control Switch. Using this switch, the driver can summon the requested information on the master display of the DAF instrument panel.
MGS	Mechanical Gear Shift	This is the mechanical gearbox operation.
MTCO	Modular Tachograph	This is the modular tachograph. The tachograph records driving and rest times, the distance travelled and speed on a tachograph disc. It also transmits the vehicle speed to other vehicle systems.
PCI	PACCAR common rail injection	An electronically controlled pump unit and an electronically controlled injector control the fuel injection.
PTO	Power Take Off	When energy required for the superstructure is taken from the vehicle, a PTO is used.
SAC	Smart Air supply Control	The SAC system, with its electronic intelligence, is responsible for the cleaning, drying and distribution of filtered, compressed air and continuous, intelligent, active air management.

Abbrevia- tion	Explanation	Function
SLP	Safe Loading Pass	This is an English directive on the transport of hazardous substances by road. When the main switch is used, the earth and power supply connections of the electrical systems are interrupted.
SWS	Steering Wheel Switches	The steering wheel switches are used to control vehicle and engine functions.
VSC	Vehicle Stability Control	This is the vehicle stability control. The vehicle stability control signals a pending instability and intervenes if necessary.
VIC-3	Vehicle Intelligence Centre - version 3	The VIC-3 gathers information and actuates vehicle functions.



## 5.1 CHECKS

### 5.1.1 Overview of daily checks

#### Overview of the driver's daily checks

- Correct operation of lights and instruments:
  - Check the operation of the exterior lighting. See section 'Exterior lighting'.
  - Check the operation of the horn, windscreen wipers and washers.
- System warnings using the Menu Control Switch. See section 'Menu overview' in the chapter 'Master display'.
- Fuel level.
- Engine oil level. See section 'Engine oil level'.
- AdBlue level.
- Correct setting of seat and mirrors.
- Coolant level. See section 'Coolant level'.
- Fluid level in the windscreen washer reservoir. See section 'Windscreen washer fluid level'.
- Air filter indicator.
- Possible air, coolant or oil leaks.
- Wheel attachment and tyre pressures.
- Tread depth of tyres.
- Tread of each tyre for even distribution of wear pattern.
- Trailer:
  - Check the trailer coupling or fifth wheel for correct attachment and correct operation.
  - Check the connections for lighting and brakes.
  - Check the operation of the lighting, brake lights and direction indicators.
  - Check the operation of brakes.
  - Check the condition and pressure of the tyres.



**NOTE:** When a system warning or leakage is found, contact a DAF Service dealer.



**WARNING!** Flammable materials in the vicinity of the exhaust system can create a fire. This can result in serious injury and damage to the vehicle.

- Remove cleaning rags, flammable materials, accumulated dirt and so on in the vicinity of the exhaust system, including the catwalk.

### 5.1.2 Overview of weekly checks

#### Overview of the driver's weekly checks

- Brake system air dryer.
- Automatic greasing system.

### 5.1.3 Opening the front panel

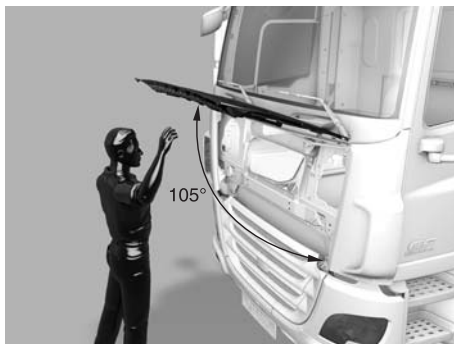
The top section of the front panel can be folded up.

Unlock the front panel by pulling the lever in the top section of the front panel.

When the front panel is open it is held in the raised position by two gas struts.



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### 5.1.4 Coolant level

The master display shows the 'Coolant low' warning when the coolant level is too low.

#### Topping up coolant



**WARNING!** Scalding steam and hot coolant under pressure may escape when removing the expansion tank filler cap while the engine is hot. This can cause severe burns and serious injury.

- Never remove the expansion tank filler cap while the engine is still hot.
- Wait until the coolant temperature is lower than 50°C.
- Place a cloth over the filler cap and unscrew it carefully to relieve excess pressure. The filler cap can then be fully unscrewed.



**WARNING!** Coolant is a toxic fluid. Physical contact can lead to serious health problems.

- If there is contact with the eyes: rinse with plenty of water for at least 15 minutes and consult a doctor.
- Avoid prolonged or repeated contact with the skin. If there is contact with the skin: rinse the skin profusely with plenty of water.
- If swallowed: do NOT induce vomiting. Rinse the mouth, drink two glasses of water and consult a doctor.

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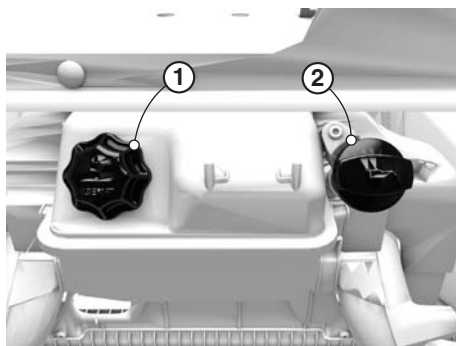
**CAUTION:** Topping up coolant in a hot and running engine can damage the engine.

- Top up when the engine is not running.
- Top up when the engine is cold.
- Top up slowly with coolant.



**NOTE:**

- Make sure that the vehicle stands on a flat and level surface when topping up coolant.
- Always use coolants which meet the DAF specifications. See section 'Coolant' in the chapter 'Technical data'.



D001772

1. Open the front panel. See section 'Opening the front panel'.
2. Remove the filler cap (1) of the cooling system.
3. Check the coolant level. The coolant level must be at the base of the filler opening.
4. If necessary, top up the coolant with the specified coolant. See section 'Coolant' in the chapter 'Technical data'.
5. Install the filler cap.
6. Close the front panel.



**NOTE:** If the coolant frequently needs topping up or there are any signs of coolant leakage, consult a DAF Service dealer.

### 5.1.5 Engine oil level

The engine oil level can be checked on the master display.



**NOTE:** The oil level can only be measured and displayed when the engine is not running.



- CAUTION: An incorrect oil level can seriously damage the engine.**
- **Make sure that the vehicle is standing on a flat and level surface when the oil level is measured.**

## Oil level check

The engine oil level can be checked on the master display ('Vehicle info' - 'Oil level'). The ignition must be on and the engine must **not** be started!

The engine oil level can only be checked:

- When the engine oil temperature was at least 40°C at the last engine stop, **and**
- After a certain amount of time has elapsed since the last engine stop. This waiting time depends on the engine oil temperature at the last engine stop. See table below.

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Oil temperature (°C)	0	40	60	80
Waiting time (minutes)	120	30	20	15

Example: The oil temperature at the last engine stop was 80°C. The waiting time before the oil level can be checked is 15 minutes.



**NOTE:** The oil temperature rises to 80°C after driving approximately 25 km with a loaded truck.

So if the vehicle is moved after being stationary for a longer period (for example for refuelling), the oil is cold and has not risen above 40°C. The waiting time is then 120 minutes.

If the above conditions are not met, the message **'No data, see manual'** appears on the master display indicating that the oil level cannot be measured.

## Warning 'Oil level low'

If the oil level is too low, a red or yellow warning is activated 3 seconds after the ignition has been switched on. The engine must not be started!

The warning symbol remains active for 40 seconds. This warning can only be activated when the conditions to perform an oil level check are met.

If the warning is yellow, add 5 litres of oil.

If the warning is red, add 10 litres of oil.

## Topping up engine oil

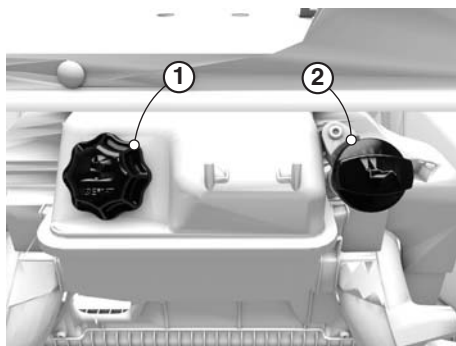


- CAUTION: An incorrect oil level can seriously damage the engine.**
- **Make sure that the vehicle is standing on a flat and level surface when the oil level is checked.**





**NOTE:** For topping up engine oil **use the same engine oil brand, grade and ACEA class** as the oil filled at the last oil change. Only use engine oil that meets DAF specifications. See section 'Engine oil' in the chapter 'Technical data'.



D001772

1. Open the front panel. See section 'Opening the front panel'.
2. Remove the filler cap (2).
3. Top up with small amounts of engine oil (maximum 2 litres each time) through the filler opening.



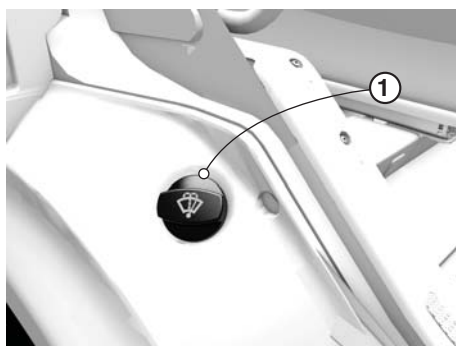
**NOTE:** Do not top up above the maximum level.

4. Between each fill, switch off the ignition, wait a few minutes and check the oil level via the master display:
  - Switch off the ignition for at least one minute.
  - Switch on the ignition. **Do not start the engine.**
  - Check the engine oil level using the master display ('Vehicle info' - 'Oil level').
5. Install the filler cap and close the front panel.

## 5.1.6 Windscreen washer fluid level

The master display shows the 'Washer fluid level low' warning when the windscreen washer fluid level is too low.

The filler cap of the windscreen washer reservoir is located in the right-hand side door fender.



D001806-2

1. Open the co-driver door.

2. Remove the filler cap (1) from the windscreen washer reservoir.



*NOTE: Use all season screenwash.*

3. Check the fluid level via the filler opening. If necessary, correct the fluid level.
4. Install the filler cap.

## 5.1.7 Exterior lights

With exception of the LED lights the status of all regulated vehicle lights is monitored by the vehicle's electronics.

Any measured defect is displayed as a warning on the master display.



*NOTE: Regulated vehicle lights do not include beacon lights and work lights.*

In addition, the exterior lights can be manually checked by the driver through:

- Physically operating and checking all lights.
- Using the exterior light check function on the ignition key or hand-held transmitter.

### Using the exterior light check function

1. Before getting into the cabin, press the exterior light check switch (1) on the ignition key or hand-held transmitter for at least two seconds.



D001688

2. Now the exterior light check function of the vehicle starts.  
The exterior lights are activated in the following sequence:
  - The front fog lights or dipped beam and the brake lights are active.
  - All direction indicators are active.
  - The main beam and roof lights (sky lights or auxiliary lights) and the truck and trailer reverse lights are active.
  - The dipped beam and rear fog lights are active.



*NOTE: All marker lighting is continuously active during the exterior lights check.*



**NOTE:** Defects are not stored and displayed on the master display as the ignition is still switched off.  
*The total procedure repeats itself several times to provide enough time to walk around the vehicle.*

3. To stop the check, press the exterior light check switch for one second or press the door lock or unlock button on the ignition key or hand-held transmitter.

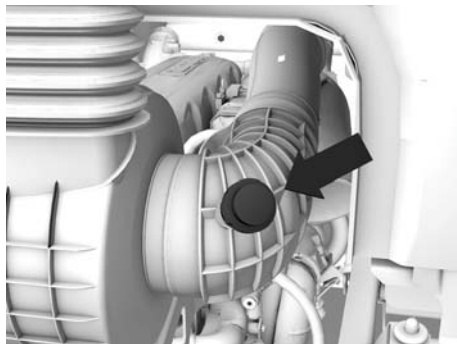
### 5.1.8 Air filter indicator

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The air filter indicator is located immediately behind the air filter at the rear of the cabin.

If the indicator is in the red area, the air filter is seriously fouled and must be replaced. Consult a DAF Service dealer.

Clogged air filters lead to increased fuel consumption and loss of power.



D001805

### 5.1.9 Wheels and tyres

- Remove any stones and so on from the tread and from between the tyres (if twin wheels are fitted).
- Check for evidence of wear and damage and for nails or other foreign objects caught in the tyres.
- Check the attachment of the wheels.
- Check the tyre pressures (do not forget the spare wheel). Check and correct the tyre pressures while the tyres are cold. See 'Technical data' or the back page of this book for the correct tyre pressures.



**NOTE:** If a worn tyre is underinflated by 2 bar, the ABS control is inoperative under extreme conditions! Also see 'Changing wheels' in chapter 'Emergency repairs' of this manual.

## 5.1.10 Brake system air dryer

The air dryer system (SAC) can be checked for correct operation by inspecting the air reservoirs for condensed water.

1. Check the air reservoirs for condensed water by pulling on the rings of the drain valves.
2. Replace the air dryer element if more than the normal amount of water is drained off repeatedly. Consult a DAF Service dealer.



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**NOTE:** If the system pressure drops rapidly, the air dryer system cannot perform optimally. This pressure drop is caused by an air leak or by coupling up a trailer without air.

In this situation, it issues warnings on the master display.

There are two warnings:

- 'Check for air leakage'.  
This warning is self-explanatory.
- 'Drain air reservoirs'.

If the air dryer system supplies a large volume of air quickly, its air-drying function is not optimum. In this case, moisture might enter the air supply system.

## 5.1.11 Batteries

### Vehicle battery system

The vehicle has a regular battery system with a set of two 12 volt batteries.



**WARNING!** Sparks and open flames in the vicinity of a battery can lead to an explosion which can cause serious injury.

- Avoid sparks and open flames in the vicinity of batteries.



**CAUTION:** If battery types other than those specified are used, electrical components can be damaged.

- Do not use battery types or capacities other than those specified. Consult a DAF Service dealer.



**CAUTION:** When power is used directly from the batteries, the batteries can be damaged and it may lead to starting difficulties.

- Do not make any permanent direct connections to the batteries.

- The batteries are not liquid-filled and are maintenance-free.
- Check the batteries for leakage around cell plugs and for terminal damage. Consult a DAF Service dealer if leakage or damage is found.
- Check that the battery poles and terminals are clean and greased. If necessary, coat the poles with an acid-free petroleum jelly.

### Dual battery system

The dual battery system is equipped with two battery sets (2x70Ah and 2x95Ah).

- During starting, both battery sets are used to start the engine.
- When the engine is running, both battery sets are charged.
- When the engine is not running, only one battery set (2x95Ah) is used for the vehicle power supply.

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**NOTE:** Depending on the vehicle configuration, the position of the batteries can differ:

- All batteries are located in a battery box.
- The batteries used for accessory functions are located in the battery box; the two batteries for the engine are at the rear of the cabin.
- This type of battery is not liquid filled and is maintenance free.



**CAUTION:** Short circuiting the relay of the dual battery system can cause damage to the electrical components.

- Do not short circuit the relay contacts of the dual battery system.



**CAUTION:** Drawing power directly from the batteries or the relay of the dual battery system can cause damage to the batteries and may lead to starting difficulties.

- Do not make any permanent direct connections to the batteries.
- Do not make any permanent connections to contact 30 of the dual battery system relay.

- Check that the battery poles and terminals are clean and greased. If necessary, coat the poles with an acid-free petroleum jelly.

## 5.2 MAINTENANCE

### 5.2.1 General maintenance

The durability, safety, trade-in value and reliability of the vehicle largely depend on the care you give it. This includes regular service according to the maintenance schedules specified by DAF.

The driving style and the care given to the vehicle directly influence the condition of the vehicle. The driver can often provide the dealer with information which is very important for correct maintenance.

Contact a DAF Service dealer prior to the service intervals and related activities.

## 5.2.2 Cabin maintenance

DAF pays considerable attention to the quality of surface and paint finishing. To keep this quality as high as possible during vehicle use, perform regular maintenance on the surfaces of the cabin.

To prevent the formation of rust in box sections and other cavities, DAF protects the cabin with corrosion-inhibiting products during production.

**Due to the setting of the structure, minor bare spots may develop in this additional protective coating.**

**For this reason, DAF considers it necessary to have further treatment performed within a specific period after the vehicle has been taken into service. Consult the warranty manual.**

**If this does not happen, the warranty becomes invalid.**

**The relevant warranty conditions are listed in the warranty manual.**

## 5.2.3 Cleaning

**The appearance of the vehicle is your company's face to the world!**

### Cleaning the vehicle

Before the vehicle is cleaned, check for leaks from the engine, axles, gearbox and so on. This is no longer possible after cleaning the vehicle and performing maintenance work.



*NOTE: The use of specialised vehicle cleaners is now prevalent within the industry. These cleaners have a wide range of high pH (alkaline) or caustic properties. If administered incorrectly, they can cause an irreversible effect on or damage to the vehicle and its systems.*

Best practice while using vehicle cleaners:

- The compatibility of the substance with alkaline-sensitive surfaces must be tested before application. If in doubt, please refer to the supplier.
- Do not use cleaners in direct sunlight, specifically with high ambient temperatures and/or with a hot vehicle/body structure.
- Always spray the vehicle fully with clean water before applying correctly diluted cleaner.
- Make sure that the cleaner is diluted in the correct proportion as directed by the supplier.
- Apply the solution whilst maintaining an adequate clearance to the component being washed; DAF recommends a minimum clearance of 50 cm.
- Do not allow the cleaning solution to dry without rinsing with clean chemical-free water.

When a high-pressure cleaner is used, take special note of the following points:

- Make sure that the doors, windows and roof hatch are properly closed.
- Never spray directly on seals. There is a risk that they can be forced open, allowing water to penetrate and flush away the grease packed behind them. This may happen, for example, with the universal joint on the steering box. As a result, the spider may seize so that the steering jams.
- Do not spray directly onto steering ball joints.
- The power steering fluid reservoir is fitted with a vent. Water may enter the reservoir via this vent and damage the steering gear.
- When cleaning the radiator or intercooler, make sure not to damage the fins.
- Do not direct the high-pressure cleaner or steam cleaner jet at the air conditioning system condenser for too long. As a result of the high temperature, the pressure in the system will rise too high, which may damage the system. Parts of the air conditioning must not be cleaned with the aid of a high-pressure or steam cleaner as this can damage the seals.
- Make sure that no water can enter the differential and gearbox via the vents.
- Make sure that no water can enter via the reservoir bleed screws of the clutch, trailing axle and so on.
- The engine and engine compartment can be cleaned with a high-pressure or steam cleaner. Do not spray directly onto electrical components such as the fuel system components, electronic control units, starter motor, alternator, air conditioning compressor, headlights and so on. **Directly after the cleaning process, the engine must run (at idle or driving) for at least 15 minutes.**
- Carefully clean the engine encapsulation and its fittings. Remove any spilt oil and diesel oil to avoid the risk of fire.
- Do not aim the jet of water directly at electrical connectors.
- Do not aim the jet at the gear change lever unit.
- When cleaning the vehicle, make sure that no water can enter the air inlet system via the air inlet or its flexible seals.
- When the vehicle has been cleaned, lubricate it with a grease gun or via the automatic lubrication system. This is important because it prevents the penetration of moisture and dirt at the various pivot points.

### Cleaning the cabin interior

The plastic panels can be cleaned with a household cleaning agent and warm water. The fabric trimming must be cleaned with a non-aggressive dry-cleaning agent or an equivalent product. Leather trimming must be cleaned with leather cleaning solution and treated with leather conditioner.

#### Master display

- Do not use alcohol-based cleaners or windscreen cleaners to clean the lens of the master display.
- Use a soft cotton or linen rag and clear or mild soapy water to clean the master display.

**Seats and safety belts**

- Dirt can impair the way in which the seat functions. It is therefore important to keep the seat clean! Do not remove the upholstery from the seat when cleaning the seat.
- When cleaning the upholstery, do not allow it to become soaked.
- Before using standard upholstery or plastic cleaning agents, test for compatibility on a small, concealed area.
- High-pressure cleaning equipment must not be used to clean the seat or safety belts.
- Clean the safety belts with an all-purpose cleaner, avoiding the use of caustic substances.

**Cleaning the cabin exterior**

The external paintwork of the cabin is subject to attack by corrosive substances, for example road salt, grit and polluted air.

The paintwork must therefore be cleaned regularly.

When cleaning the cabin, make sure that:

- No caustic cleaners are used.
- No hard brushes are used.
- All seams, gaps and door shut-lines are thoroughly cleaned.

It is advisable to clean the paintwork using DAF shampoo.

**Cleaning the windscreen**

Depending on the vehicle type, a cleansing rod with sponge and wiper for cleaning the windscreen may be present in the storage compartment.

Slide out the rod to the length needed and use the rod to clean the windscreen.

When cleaning the windscreen, make sure that:

- The windscreen wipers are removed from the windscreen.
- No hard brushes are used.
- Use the wiper to wipe the windscreen dry and improve visibility.

It is advisable to clean the windscreen using DAF shampoo.

**Cleaning the head- and fog light lenses**

Never use hard or sharp objects to clean the lenses of the head- and fog light.

This can damage the UV coating of the lenses causing them to change colour.

**Waxing the cabin**

The paintwork of new vehicles is waxed to protect it against the elements.

After a time this wax coating wears as a result of cleaning and other external influences. To give corrosive substances less chance of attacking the paint, protect the paintwork with a new wax coating at least twice a year.



It is advisable to wax the cabin using DAF wax.

A DAF Service dealer can provide advice about additional anti-rust treatment and maintenance of the paintwork when the vehicle is in service.

### 5.2.4 Bug screen

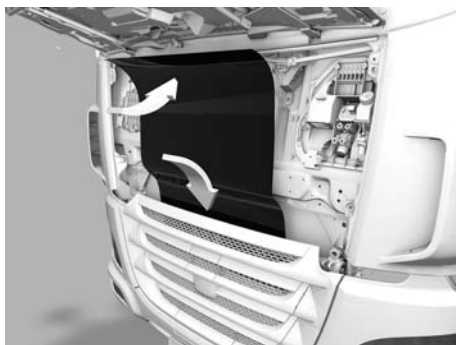
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To prevent contamination of the radiator and/or condenser there is a bug screen positioned in front of the radiator or condenser.

For cleaning it is possible to click the frame at the upper side out of the fixing points.



*NOTE: Use of this bug screen depends on the vehicle configuration.*



D001808

### 5.2.5 Auxiliary heater

If necessary, install a separate fuel tank for the auxiliary heater.

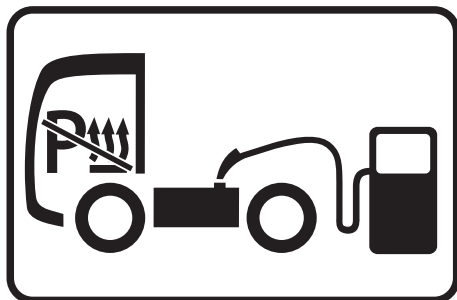
If the tank has been filled up with winter diesel, allow the auxiliary heater to run on the new fuel for half an hour. Make sure that all the old fuel is used up.

The above recommendations apply to both air and water heating and to all vehicle types.



**WARNING! Fuel fumes contacting a source of heat can cause an explosion and serious injury.**

**– Switch off the auxiliary heater when filling the tanks with fuel!**



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## 5.2.6 Lubricating fifth wheel

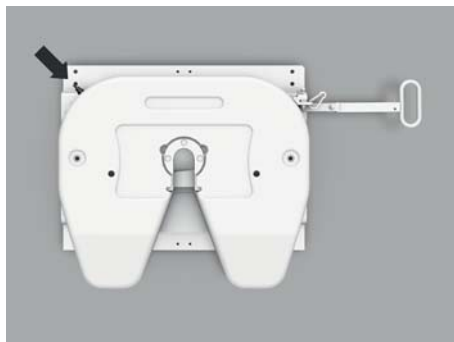
### Lubricating the fifth wheel

DAF uses various fifth wheels. The following directions for greasing apply in general to the fifth wheels supplied by DAF.

#### Standard fifth wheel

(every 5,000 km)

- Uncouple the semi-trailer
- Clean the fifth wheel coupling, the semi-trailer skid plate and king pin.
- Grease the fifth wheel top plate.
- Grease the semi-trailer skid plate and king pin lightly.
- Couple the semi-trailer and grease the grease nipple(s) with a grease gun.



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#### Low maintenance fifth wheel (with Teflon top plate liners)

(every 10,000 km)

- Uncouple the semi-trailer
- Clean the fifth wheel coupling, the semi-trailer skid plate and king pin.
- Oil the Teflon top plate liners and semi-trailer skid plate **lightly**. A thin layer of oil prevents corrosion of the semi-trailer skid plate and ensures a long service life of the fifth wheel Teflon top plate liners.
- Couple the semi-trailer and grease the grease nipple(s) with a grease gun.



D001693





## 6.1 OPENING AND CLOSING THE FENDER

To create extra space between the cabin and the semi-trailer, the fender on the catwalk step side can be opened. In some vehicle configurations, both fenders can be opened.

Open the fender by gripping the fender at the bottom and back and pulling it out, and then pushing it forward.

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Close the fender by pushing it back into the locked position.



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The steps are integrated into either the fuel tank or the cover. Depending of the vehicle type, the steps integrated into the cover can be fold down.

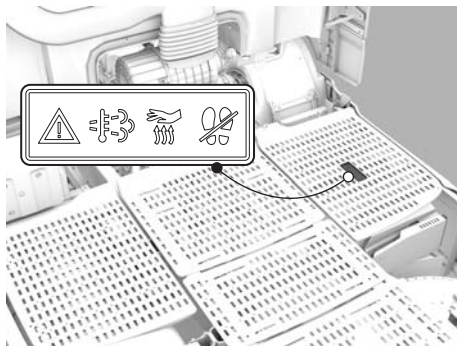


**WARNING! Do not go onto the catwalk when the exhaust system is regenerating. The temperature of the catwalk is high and can possibly be harmful.**

**Do not leave items on the catwalk or tie items to the catwalk, as they can be damaged by the high temperature.**

During regeneration of the DPF, its surroundings and the catwalk are very hot.

A warning plate has been fitted onto the catwalk.



D001849

## 6.2 FIFTH WHEEL

DAF uses various fifth wheels. The following directions for use apply in general to the fifth wheels supplied by DAF.

### Coupling semi-trailer

1. Be absolutely sure that the semi-trailer is braked and cannot roll away.
2. Pull out the fifth wheel handle, as explained in the instructions for the fifth wheel concerned on the following pages. The jaw is now opened and ready for coupling.

3. Drive the tractor close to the semi-trailer and make sure that the coupling pin is in the middle of the V-shaped fifth wheel opening.
4. The semi-trailer skid plate must be 20 mm to a maximum of 50 mm **lower** than the fifth wheel plate. If necessary, adjust the height of the semi-trailer or tractor.
5. Reverse the tractor **slowly** until the semi-trailer is on the fifth wheel and the jaw is locked by the coupling pin. The handle then springs back into its original position.
6. Check whether the fifth wheel is locked by **slowly** driving forward a short distance.
7. Lock the handle, as explained in the instructions for the fifth wheel concerned on the following pages (if necessary, secure with a safety catch or a padlock).
8. Check that the semi-trailer is coupled to the fifth wheel without any air gaps and that the automatic locking has in fact taken place.
9. When coupling, check the coupling head rubbers of the air pipes of both the tractor and the semi-trailer for possible damage.
10. Connect the brake pipes and the cables for the lighting and ABS/EBS.
11. Retract the semi-trailer undercarriage.

## Uncoupling semi-trailer

1. Park the vehicle on flat and firm ground.
2. Make absolutely sure that the semi-trailer is braked.
3. Place wheel chocks in front of and behind the semi-trailer wheels.
4. Wind down the semi-trailer undercarriage using quick operation until the feet touch the ground. Switch to slow operation and wind down a few turns further. Do not lift the semi-trailer from the fifth wheel.
5. Detach the brake pipes and cables for lighting and ABS/EBS.
6. If fitted, detach the safety hook or padlock.
7. Unlock the fifth wheel by pulling out the handle, as explained in the instructions for the fifth wheel concerned on the following pages. The jaw is now opened and ready for uncoupling.
8. Slowly drive the tractor from under the semi-trailer.



*NOTE: On vehicles with air suspension, the remote control of the air suspension is used for coupling and uncoupling the trailer. When coupling, the vehicle can be brought to the correct coupling height or the semi-trailer can be lifted before the supports are wound down.*

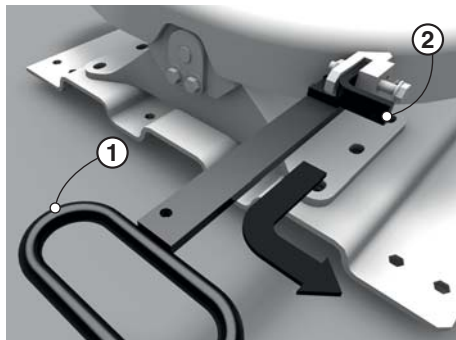
## Important

After coupling or uncoupling a semi-trailer, always press the switch for normal driving height to automatically return to the correct **driving height**.

## JOST fifth wheel (version 1)

### Unlocking

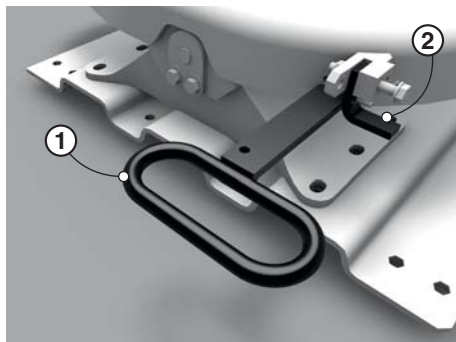
- Fold up the hook (2), as shown in the illustration.
- Pull the handle (1) forward and outward and hook the extended handle into the fifth wheel.



D001602

### Locking

- Locking is done automatically during coupling; check that the hook (2) is folded down.

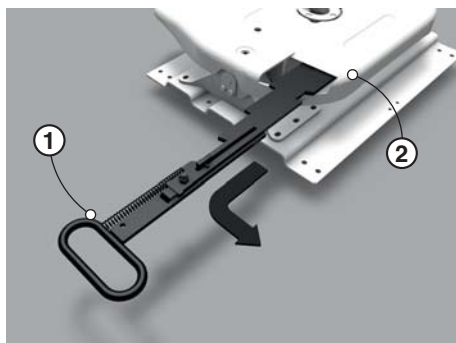


D001603

## JOST fifth wheel (version 2)

### Unlocking

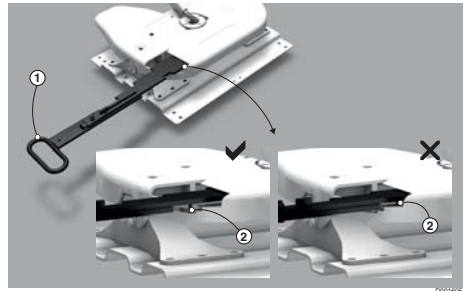
- Pull the handle (1) forward and outward and hook the extended handle into the recess (A).



D001604

## Locking

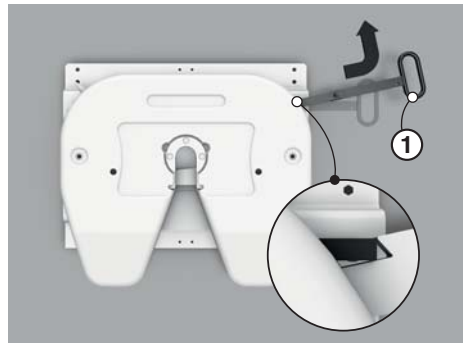
- Locking is done automatically during coupling; check that mark (2) is within the fifth wheel.



## Fontaine fifth wheel

### Unlocking

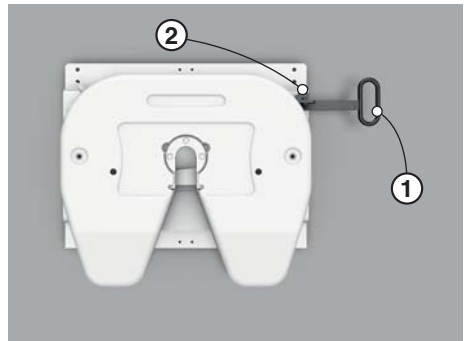
- Remove the spring hook.
- Pull the handle (1) forward and outward and hook the extended handle into the fifth wheel (see detail).



D001608

### Locking

- Locking is done automatically during coupling; check that the handle (1) is in its original position and fit the spring hook (2).



D001609

## 6.3 CONNECTING THE ABS OR EBS CONNECTOR OF A TRAILER

ABS: Anti-lock Braking System  
EBS: Electronically controlled brake system

A trailer with ABS is fitted with an anti-lock braking system.



A trailer with EBS is fitted with an electronically controlled brake system, which incorporates ABS.

Both versions are connected to the extra socket of the ABS/EBS system on the truck with a special plug.

If this plug is not connected, a yellow warning will appear on the master display.

Consequences of **not** connecting a trailer EBS to a truck EBS via the ABS/EBS plug:

- no load-dependent brake control;
- no ABS (depending on trailer EBS system version);
- no EBS control;
- full brake action always maintained, regardless of load.

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**WARNING! Not connecting an EBS trailer to an EBS truck via the ABS/EBS plug can result in a longer braking distance, unstable brake behaviour and unstable vehicle behaviour during critical driving situations. This can lead to very dangerous situations.**

- Always connect the ABS/EBS plug.

## Overview of combination possibilities

	Trailer without ABS (correctly connected)	Trailer with ABS (correctly connected)	Trailer with EBS (correctly connected)	Trailer with EBS (5-pin ABS wiring harness connected instead of 7-pin EBS wiring harness)
<b>Truck with EBS</b>	<ul style="list-style-type: none"> <li>– Load-dependent brake control (mechanical) active</li> <li>– No ABS control</li> </ul>	<ul style="list-style-type: none"> <li>– Load-dependent brake control (mechanical) active</li> <li>– ABS control active</li> </ul>	<ul style="list-style-type: none"> <li>– Load-dependent brake control (electrical) active</li> <li>– ABS control active</li> <li>– CAN communication</li> </ul>	<ul style="list-style-type: none"> <li>– Load-dependent brake control (electrical) active</li> <li>– ABS control active</li> </ul>



## 7.1 BEFORE A DRIVE

Before setting out on a drive, always perform the daily checks before starting the engine for the first time. See section 'Overview of daily checks' in the chapter 'Inspections and maintenance'.

Perform the weekly checks once a week. See section 'Overview of weekly checks' in the chapter 'Inspections and maintenance'.

## 7.2 REFUELLING DIESEL AND REFILLING ADBLUE

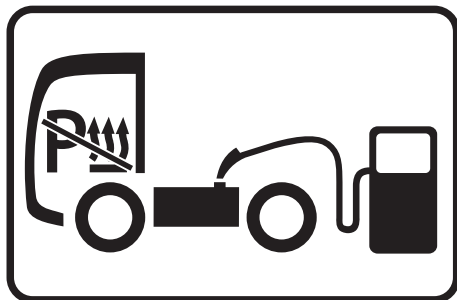
### Diesel

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**WARNING!** Fuel is highly flammable and can cause fire or an explosion resulting in serious injury.

- Avoid sparks and open flames in the vicinity of fuel.
- Always clean spilled fuel.
- Switch off the auxiliary heater when filling the tank with fuel.



D001862



**CAUTION:** The use of incorrect or contaminated fuel can lead to serious damage to the fuel system and/or engine.

- Only use the specified fuel. See section 'Diesel fuel' in the chapter 'Technical data'.
- It is prohibited to add petroleum (kerosene), petrol or any other additive to the diesel fuel.
- Clean the vicinity of the fuel tank opening before opening it and filling up the tank.
- Take care that nothing except clean fuel can enter the tank.

The tank opening for diesel is on the fuel tank.

Make sure that the tank is as full as possible to prevent condensation (especially in winter).



*NOTE: When the vehicle is equipped with a dual fuel tank, the fuel tanks must be refuelled separately.*



D001811

If outside temperatures are persistently low, only fill up with **winter diesel** produced by a reputable oil company. During the winter months, the oil companies often use additives to prevent blockages caused by the precipitation of paraffin crystals (wax deposits).



*NOTE: Additives which are used to prevent precipitation of paraffin crystals have a **purely preventative** effect. They cannot dissolve precipitated paraffin crystals.*

**Always** have a spare fuel fine filter in the vehicle! If it gets blocked in any way (for example, by paraffin crystals), the filter must be replaced to continue the drive.

## AdBlue

The EAS (Emission Aftertreatment System) consumes AdBlue. The AdBlue usage depends on:

- Vehicle configuration.
- Driving style.
- Load.
- Engine conditions (cold or warm).



**CAUTION: The use of incorrect or contaminated AdBlue can lead to serious damage to the Emission Aftertreatment System (EAS).**

- **Only use the specified AdBlue. See section 'AdBlue' in the chapter 'Technical data'.**
- **Clean the vicinity of the AdBlue tank opening before opening it and filling up the tank.**
- **Take care that nothing except clean AdBlue can enter the tank.**

The tank opening for AdBlue is on the AdBlue tank, the filler cap for AdBlue has a blue colour. Having refuelled diesel, also fill up the AdBlue tank with AdBlue. Open the fender to get access to the filler opening.

Insert the dedicated AdBlue filler gun fully into the neck of the tank so that the magnet in the neck releases the AdBlue delivery. Filling up the AdBlue tank using a dedicated filler gun results in a maximum fill volume of 80%.



D001812

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Under certain conditions during light-duty operation, little or no AdBlue may be used. In the absence of a warning symbol, it can be assumed that the system functions correctly.



*NOTE: There remains a small quantity of AdBlue in the AdBlue tank, even if the level gauge indicates that it is empty.*

*Any spilled AdBlue can simply be removed with clean water. Dried AdBlue leaves a white deposit which can be removed with clean water as well.*



*NOTE: Not using AdBlue according to the vehicle's specifications to reduce pollutant emissions is a criminal offence and can invalidate the manufacturer's warranty.*

The system warns of low AdBlue levels in four steps with post-warning indications as shown.

The texts and system reactions are as follows:



D001730

1. **'AdBlue level low'.**

To avoid further warnings, refill the AdBlue tank.

2. **'AdBlue level very low'.**

The warning indicator at the AdBlue gauge changes colour to yellow.

To avoid further warnings, refill the AdBlue tank.

3. **'AdBlue level too low'.**

The 'General' warning indicator comes on, and the engine power is reduced after a vehicle standstill.

To avoid further warnings and reset the engine power de-rate, refill the AdBlue tank.

4. **'AdBlue tank empty'.**

In addition to the 'General' warning indicator, the 'MIL' warning indicator comes on, and, at the next key cycle, the vehicle speed limit is applied.

If there is no key cycle for a period of eight hours, a warning is displayed. This warning informs the driver that the vehicle speed is limited starting at the next vehicle standstill.

To avoid further warnings and reset the vehicle speed limit, refill the AdBlue tank.

The system also issues a post-warning indication for:



D001754-2

– **'Incorrect AdBlue'.**

The 'MIL' and 'General' warning indicators come on, and, if ignored for ten hours, the engine power is reduced after a vehicle standstill.

After 20 hours, the vehicle speed is also reduced at the next key cycle.

If there is no key cycle for a period of eight hours, a warning is displayed. This warning informs the driver that the vehicle speed is limited starting at the next vehicle standstill.

– **'AdBlue dosing malfunction'.**

The 'MIL' warning indicator comes on, and, if ignored for a period of time, the engine power is reduced after a vehicle standstill. Depending on the severity of the malfunction, this period of time varies between 10 and 36 hours.

After 20 to 100 hours and depending on the severity of the malfunction, the vehicle speed is reduced at the next vehicle standstill.



**NOTE:** Both of these post-warning indications require assistance of a DAF dealer for cleaning or repairing the AdBlue system.



D001755

## 7

### 7.3 STARTING PROCEDURE

#### Glowing

If the ignition is on, the engine electronics automatically determine the necessary pre-glowing time.

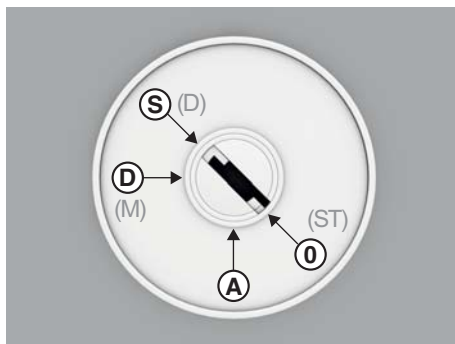
The necessary pre-glowing time depends on the ambient and engine temperatures, but no pre-glowing warning indicator is visible on the master display.

#### Starting



**WARNING!** When starting the engine inside a building, open the doors of the building fully to ensure adequate ventilation or connect an exhaust gas extractor.

**Engine exhaust gases contain carbon monoxide, an invisible, odourless, but highly toxic gas. Inhalation of these gases may cause unconsciousness and death.**



D001669

1. Apply the park brake.
2. Turn the ignition key to position D (M).
3. Wait until the master display has completed its start-up phase. See section 'Start-up phase' in the chapter 'Master display'.
4. Check and if possible correct all displayed system warnings.

5. Check the operation of the fuel level gauge and the coolant temperature gauge.
6. Check the engine oil level. See section 'Engine oil level' in the chapter 'Inspections and maintenance'.
7. Turn the rotary switch of the AS Tronic gearbox to neutral (N).



*NOTE: Vehicles with AS Tronic gearboxes do not start when the rotary switch is not in neutral (N).*

*A flashing **N** appears in the master display and an acoustic signal is audible when the rotary switch is not in position **N** when starting. If a '-' symbol appears in the master display, the system is not available and it is not possible to drive off. In this case, switch off the ignition for at least five seconds and switch it on again. If the '-' symbol still appears, contact a DAF Service dealer.*



*NOTE: If the vehicle is equipped with a manual gearbox, depress the clutch pedal and put the gear change lever in neutral. Vehicles with manual gearboxes do not start when the gearbox is not in the neutral position.*

*Never start the vehicle when the gear change lever is folded backward.*

8. Without pressing the accelerator pedal down, turn the ignition key to position S (D) until the engine starts. Release the key after 10 seconds if the engine does not start. Then wait 10 seconds and try again.



*NOTE: If starting of the engine exceeds a certain period of time, the starter motor is deactivated. A system warning pops up on the master display. After a certain waiting period, it is possible to restart the engine.*





D001813



D001814

No oil pressure warning is visible on the master display. If the engine is running, it is not possible to increase the engine speed until the oil pressure rises high enough.

When the engine is running, the daytime running lights go on automatically (LEDs in headlights and rear lights, marker lighting). This function can be switched off for one key cycle (start - stop -start). Use the light switch to switch off this function. See section 'Instrument panel' in the chapter 'Instruments and controls'.

The engine speed can also be increased with the right-hand steering column switch or the switch on the steering wheel.

Before driving off, check that the central warning indicator is not on and that no red system warnings are active.

During cold ambient conditions, the engine may sound different after a cold engine start due to a different fuel injection strategy.

## 7.4 STOPPING PROCEDURE



D001815

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### Parking



**WARNING!** Always apply the park brake after parking the vehicle.

- Not applying the park brake after parking the vehicle can cause the vehicle to move unintentionally. This can lead to serious injury and damage to the vehicle.



**WARNING!** Do not release the park brake while the steering lock is still engaged.

- If the park brake is released while the steering lock is still engaged, the vehicle cannot be steered. This can lead to serious injury and damage to the vehicle.

Pull the park brake handle down as far as possible and make sure that the lever springs noticeably into its locked position.

### Test position

If the vehicle is parked in unfavourable circumstances (gradient, slippery road surface and so on), always carry out this test. The combination can then be safely parked, even if air leaks make the trailer brakes ineffective.

- Pull the park brake handle down as far as possible (position (1) normal parking position). Press the park brake handle in (2) and pull it further down (3) (**the test position:** the brakes of the trailer are now released) and check if the vehicle combination remains in position.



D001816

- Put wheel chocks in front of and behind the wheels of the driven axle.
- Angle the front wheels so that the vehicle does not move into the traffic stream if it is accidentally set in motion.

If the vehicle combination does not remain in place in the test position, find a flatter place to park the vehicle.



**NOTE:** The vehicle is equipped with a park brake warning system. If the driver's door is opened while the engine has been switched off and the park brake has not been applied, an acoustic signal is given and a warning symbol is shown on the instrument panel.

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### Vehicle with AS Tronic

Turn the rotary knob to neutral (N).



D001813



**WARNING!** Leaving the vehicle with the engine running and a gear engaged, for any reason whatsoever, can result in the vehicle moving off without a driver. This may lead to dangerous situations resulting in serious injury and can damage the vehicle.

- Never leave the vehicle when the engine is running and a gear is engaged.
- Always set the gearbox selector switch to N (neutral) before leaving the vehicle.
- Always apply the park brake before leaving the vehicle.



**WARNING!** When the engine is switched off, the gearbox automatically shifts to neutral. If the service brake or park brake is not engaged, the vehicle can roll away. This can lead to serious injury and damage to the vehicle.

- Always apply the service brake or park brake when the engine is switched off.



**CAUTION:** When a gear is engaged and the vehicle is at standstill, the clutch is open. In this situation, the clutch assembly can be damaged when stationary for long periods.

- When stationary for a long period, apply the park brake and set the gearbox selector switch to N (neutral).

## Switch off the engine

Put the gear change lever in neutral when the vehicle is stationary.

**After a long trip or when the engine has been subjected to high loading**, let the engine idle for at least 5 minutes before switching off.

It is important to let the engine run for a while. This prevents the coolant temperature from rising too high and allows the turbocharger to cool down.

Switch off the engine by turning the ignition key to 0 (rest position).

Switching off the ignition activates the delay setting of the EAS system (Emission Aftertreatment System). This may be audible outside of the vehicle (a gurgling noise in the AdBlue tank section).

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## 7.5 REGENERATING DPF, EMISSION AFTERTREATMENT SYSTEM

### Introduction

To meet the Euro 6 emission requirements, the engine has Exhaust Gas Recirculation (EGR) and an Emission Aftertreatment System (EAS).

The EAS provides aftertreatment of exhaust gases to reduce exhaust gas emissions.

The EAS can be divided into two major systems:

- The DPF system
- The SCR system.

### The DPF system

The DPF system is used to reduce the soot particles in the exhaust gases.

DPF is an abbreviation of Diesel Particulate Filter.

Exhaust gases enter the DPF system where the particulate filter traps soot from the engine exhaust gases.

The DPF is cleaned (regenerated) automatically. This regeneration of the DPF has three levels:

- Passive regeneration
- Active regeneration
- Forced stationary regeneration.

### The three levels of regenerating the DPF

#### 1. Passive regeneration.

If the temperature of the exhaust system rises above a certain level during vehicle use, the soot is burned automatically in the DPF. This is a continuous automatic process, and no indication is shown on the master display.

## 2. Active regeneration.

When the temperature in the exhaust system is too low for passive regeneration to occur, the system performs mobile active regeneration. To raise the temperature of the exhaust gases, extra fuel is injected into the exhaust and converted into heat in the DPF system. The EAS system initiates this process; it can occur at any time. Active regeneration starts and stops automatically, depending on vehicle conditions.

## 3. Forced stationary regeneration.

If the vehicle is operated in such a way that active regeneration does not occur or is not completed, the DPF cannot be cleaned automatically. Examples of such situations include only driving short distances or driving with low engine loads. In these cases, the DPF may exceed the maximum soot level and four levels of system warnings are displayed. They advise the driver to conduct forced stationary regeneration. See section 'Master display notifications'.

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**NOTE:** To prevent stationary regeneration, changing the driving conditions gives the vehicle a better chance of conducting mobile regeneration. See section 'Driving conditions for optimal DPF regenerations and fuel consumption reduction'.



**CAUTION:** During the first regeneration of the DPF, the Emission Aftertreatment System generates excessive smoke. This smoke disappears after some time and does not return with the next regenerations.

**This smoke is not considered harmful.**

## Driving conditions for optimal DPF regenerations and fuel consumption reduction

Additional fuel is used during regeneration, so optimal regeneration and therefore reduction in fuel consumption are achieved during motorway driving.

Unfavourable driving conditions for regeneration are city driving and pick-up and delivery: more fuel is needed for regeneration under these conditions. Regular motorway driving is advised to achieve the optimal regeneration conditions and reduce fuel consumption.

## How to stop regeneration

DPF regeneration may cause high exhaust gas temperatures. If there is a risk of fire or other hazardous situation, active DPF regeneration can be stopped or prevented by using the DPF switch in the vehicle.

Since active regeneration can occur at any time, the lower position ('off') of the DPF switch can be pressed any time you are driving into a hazard area where regeneration may be hazardous.



**NOTE:** Read the section 'Warning symbols on the master display' and follow the instructions.



**WARNING!** *Never allow regeneration to start automatically while driving inside a building (a service bay or shop, for example). Any time you plan to drive the vehicle into a hazard area where regeneration can be dangerous, prevent regeneration from occurring by pressing the 'off' portion of the DPF switch. Hot exhaust gases produced during regeneration can ignite an explosion, cause a fire or harm bystanders and result in serious injuries.*



**NOTE:** *As soon as the hazardous situation is cleared, place the DPF switch on the control panel back in its neutral position. If you block regeneration, it remains blocked even after restarting the engine. This may result in rapid loading of the diesel particulate filter.*

## High Exhaust System Temperatures (HEST)



**NOTE:** *During and shortly after a regeneration event, the gases exiting the exhaust system may reach high temperatures!*

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To make the driver aware of these high temperatures, the HEST (High Exhaust System Temperature) warning indicator lights up as soon as the vehicle speed drops to a level where it may become hazardous. To prevent hazardous situations, the DPF switch can be used to stop regeneration; however, the HEST warning indicator will not disappear while the exhaust gas temperature remains high.

Do not park in an area where people or combustible vapours and materials are less than 2 metres from the vehicle, and always park outdoors. Hot exhaust gases produced during regeneration can ignite an explosion, cause a fire or harm bystanders.

## Severe over-temperatures

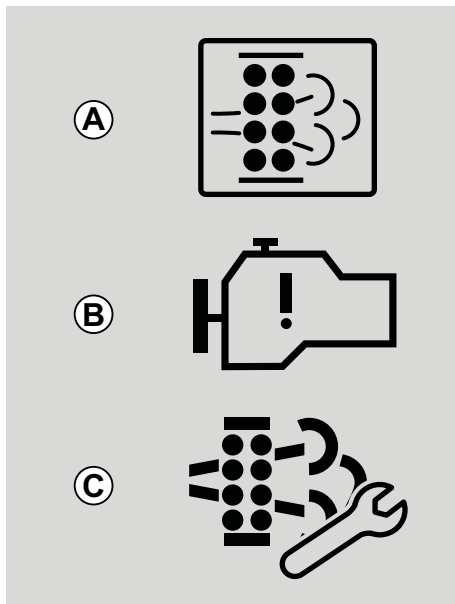
In the case of system malfunction, the EAS system can open a red pop-up screen showing the HEST warning symbol and the text 'Severe exhaust overheating' followed by 'STOP' and 'Switch off engine immediately' at vehicle standstill. When this pop-up appears, the vehicle must be parked in a safe location as soon as possible, and the engine must be stopped to prevent further damage to the Emission Aftertreatment System.

## Warning symbols on the master display

To inform the driver about the functioning of the EAS, the following symbols can be shown on the master display:

- DPF warning symbol (A)
- Malfunction Indicator Lamp (MIL) (yellow) (B)
- DPF service symbol (red) (C)

See chapter 'Master display' for the exact location and layout of the warning symbols.

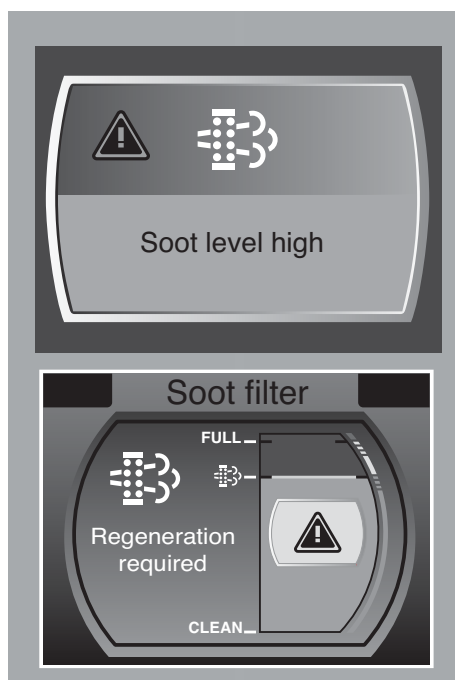


D001492-3

## Master display notifications

If the soot level in the DPF exceeds a certain level, the master display shows notifications indicating that the DPF must be regenerated. As an example, the picture shows the screens of the first notification.

Warning symbols light up along with these notifications. The first three notifications are suppressed using the MCS. The warning symbols stay on after a notification is suppressed.



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D001747-2

### **Soot level high. Regeneration required.**



First notification that a forced stationary regeneration is required.

A yellow pop-up screen showing the DPF warning symbol and the text 'Soot level high' is shown on the master display. This pop-up screen is followed by a post-warning indication showing the actual soot level with the text 'Regeneration required'.

Change your driving route, preferably to motorway driving, so that the vehicle can conduct an active regeneration, or initiate a forced stationary regeneration as soon as circumstances allow it. Follow the instructions described in section 'Initiating a forced stationary regeneration'.

### **Soot level too high. Start regeneration immediately.**



Second notification that a forced stationary regeneration is urgently required.



A yellow pop-up screen showing the DPF warning symbol and the text 'Soot level too high' is shown on the master display. This pop-up screen is followed by a post-warning indication showing the actual soot level with the text 'Start regeneration immediately'. Change your driving route, preferably to motorway driving, so that the vehicle can conduct an active regeneration, or initiate a forced stationary regeneration as soon as circumstances allow it.

Follow the instructions described in section 'Initiating a forced stationary regeneration'.



**CAUTION:** *If a forced stationary regeneration is not initiated as soon as safely possible when this notification is shown, a limited time is available before the next warning is displayed. Upon the third notification the engine will protect itself and derate power.*

### Soot filter full. Regeneration required now.

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The engine derates power (up to 50%).

A yellow pop-up screen showing the DPF warning symbol and the text 'Soot filter full' is shown on the master display. This pop-up screen is followed by a post-warning indication showing the actual soot level with the text 'Regeneration required now'.

Active regeneration is no longer possible. Initiate a forced stationary regeneration as soon as circumstances allow it.

Follow the instructions described in section 'Initiating a forced stationary regeneration'.



**CAUTION:** *If a forced stationary regeneration is not initiated as soon as safely possible when this notification is shown, a limited time is left before the soot level rises to the highest level. When the soot level reaches the highest level, an authorised Service dealer must service the vehicle. It is not possible to continue driving the vehicle.*

### Soot filter full. Service required.

The engine derates power (50%).

A red pop-up screen showing the DPF warning with the service symbol and the text 'Soot filter full, service required' is shown on the master display. This pop-up screen is followed by a post-warning indication showing the actual soot level with the text 'Regeneration required now' and intermittently showing the red 'STOP' and 'Engine warning' symbols.



If you continue to drive the vehicle, the Emission Aftertreatment System will be permanently damaged! Stop the vehicle as safely as possible and stop the engine. At this point, you can no longer initiate a forced stationary regeneration. An authorised Service dealer must service the vehicle before it can be driven normally again.

## Initiating a forced stationary regeneration

Carefully read the following instructions to initiate a forced stationary regeneration. If you have any problems or difficulties, contact the nearest Service dealer for assistance.

### Engaging conditions for a forced stationary regeneration

- The EAS indicates that regeneration is required on the master display.
- Vehicle speed = 0 km/h (0 mph).
- Park brake is applied.
- Engine is running at idle.
- Engine brake is not active.
- Engine Speed Control is not active.
- Engine coolant temperature is at least 65 degrees.
- PTO is not enabled.
- Transmission is in neutral.

If the above conditions are met, a stationary regeneration can be initiated.

### Disengaging conditions for a forced stationary regeneration

- Vehicle speed > 0 km/h (0 mph).
- Park brake is released.
- Ignition switched off with the ignition key.
- DPF switch on the control panel is in the 'off' position.
- Engine Speed Control is engaged.
- Engine brake is activated.
- Transmission shifted to a gear.
- Accelerator pedal is depressed more than 30%.



**WARNING!** *Never initiate a forced stationary regeneration in a closed building or enclosure, or in an area where people or combustible vapours and materials are less than 2 metres away from the vehicle. Always park the vehicle outside and away from all combustibles and bystanders, and make sure that no one is in the immediate vicinity. Failure to do so can cause an explosion, ignite a fire or harm bystanders and result in serious injury.*



**WARNING!** *Parking the vehicle too close to any combustible materials or vapours may cause an explosion, ignite a fire or harm someone standing close by. Before initiating the forced stationary regeneration,*

**walk around the vehicle and make sure that there is at least 2 m (6.5 feet) clearance from the sides and top of the vehicle to any combustibles. Make sure that no one is in the immediate vicinity of the exhaust system. Hot exhaust gases which can occur during a stationary regeneration can cause an explosion, ignite a fire or lead to serious injury to you and/or bystanders.**



**NOTE:** Typical operation areas or materials that can contain explosive vapours or flammable materials, or where there may be people in close proximity of the vehicle are:

- Fuel depots.
- Grain elevators.
- Dry grass, leaves or trees.
- Waste transfer stations or dumps.
- Car parks.
- Loading and unloading terminals.

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## How to initiate a stationary regeneration



**NOTE:** The driver of the vehicle is responsible for taking the necessary precautions, being aware of the surroundings and making sure that no combustibles (materials or vapours) or bystanders are close by before initiating forced stationary regeneration.

- Pull the vehicle over at a safe location.
- Get out of the cabin and walk all around the vehicle to make sure that you are at least 2 m (6.5 feet) away from all combustible materials and no one is in the immediate vicinity of the exhaust.
- Get back into the cabin.
- Press the upper portion of the 'regenerate DPF switch' (located on the control panel), follow the instructions on the post-warning indication and operate the switch for a second time to initiate a forced stationary regeneration event.
- Stay close to the vehicle as long as the regeneration is ongoing.



**NOTE:** During a forced stationary regeneration, engine rpm and noise increase.

The bar graph in the menu of the master display shows the forced stationary regeneration progress; see section 'Menu overview' in the chapter 'Master display'. On average it will take 45 to 60 minutes to complete a forced stationary regeneration. Please do not interrupt a stationary regeneration



**NOTE:** When the vehicle has been stationary with a running engine for a long period of time (overnight idling, for example), the system may open a pop-up for clean-up of the soot filter.

## Soot filter contaminated. Regeneration required now

A yellow pop-up screen showing the DPF warning symbol and the text 'Soot filter contaminated' is shown in the master display. This pop-up screen is followed by a post-warning indication with the text 'Regeneration required now'.

Initiate a forced stationary regeneration as soon as safely possible. Follow the instructions described in section 'Initiating a forced stationary regeneration'. The forced stationary regeneration to clean up the soot filter will take on average 10 to 15 minutes. This type of forced regeneration must not be stopped by putting the 'regenerate DPF switch' (located on the control panel) in the 'OFF' position.



**CAUTION:** *If the yellow pop-up of 'Soot filter contaminated' is ignored and the driver starts to drive away, the red 'STOP' and 'Engine warning' symbols will be shown. If you continue to drive the vehicle, the Emission Aftertreatment System will be permanently damaged! Stop the vehicle as safely as possible and initiate a forced stationary regeneration. The red warning will stop after forced stationary regeneration has finished.*

## The SCR system

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The SCR system is used to reduce the level of nitrogen oxides in the exhaust gases. SCR is an abbreviation of Selective Catalytic Reduction. To reduce the level of nitrogen oxides in the exhaust gases, AdBlue is injected into the exhaust gases. The EAS calculates the required amount of AdBlue to inject depending on several engine parameters and exhaust gas measurements, such as exhaust gas temperature, nitrogen oxide level and exhaust gas mass flow.

## SCR tampering

As the use of AdBlue is important for SCR system operation, penalties are implemented to make sure that the AdBlue dosing system remains in good working condition.

These penalties consist of an engine derate and a vehicle speed limit. Both of these are initiated after a predefined period and triggered by:

- AdBlue consumption – level low/too low/tank empty.
- AdBlue quality.
- AdBlue dosing malfunction.



**NOTE:** *Not using AdBlue according to the vehicle's specifications to reduce pollutant emissions is a criminal offence and can invalidate the manufacturer's warranty.*

## 7.6 DRIVING STYLE WITH THE MX-13 ENGINE

**Participating in the DAF EcoDrive driver training programme can further improve performance. Contact the DAF Service dealer to learn more about DAF EcoDrive and other DAF driver training opportunities.**

The following recommendations result in improved fuel economy without sacrificing vehicle performance.

## Driving style in general

- Anticipate traffic and other situations; try to drive without unnecessary braking, release the throttle in time. Avoid building up too much speed.
- When the vehicle rolls with the throttle released, fuel consumption is zero.
- Do not operate the throttle when this is not necessary; let the vehicle roll and allow the vehicle mass to do the work.



*NOTE: The use of the driver performance assistant can support you here. See section 'Driver Performance Assistant (DPA)' in chapter 'Driving'.*

- In case of a manual gearbox, shift up when possible; shifting up reduces the fuel consumption at that moment. Keep the engine revs in the green area of the rev counter.
- At low engine load, so not at full throttle, keep the revs as low as possible, in the bottom semi-green area of the rev counter.
- If it is used properly, the cruise control has a positive influence on fuel economy. Use the cruise control as soon as it is possible to drive for a longer period at a constant speed. It is advisable **not** to use cruise control when driving in urban areas.



*NOTE: Using the cruise control incorrectly can lead to increased fuel consumption.*

## Driving steadily

- Drive in the highest possible gear, so revs are as low as possible.
- Keep the vehicle speed as constant as possible, and use the cruise control.
- Bring the vehicle back to cruising speed using the throttle (better throttle control) before pressing the RES button of the cruise control.
- Keep a safe distance from the vehicle in front.
- Keep the cruising speed no higher than necessary.

## Acceleration on a level road

### AS Tronic gearbox, 40 tonnes:

- At full throttle, AS Tronic pulls to higher revs and skips gears.
- Go to full throttle in a controlled way.

### Manual gearbox 12-speed, 40 tonnes:

- Starting gear 1H followed by 3L, 4L, 4H, 5L, 5H, 6L, 6H.  
(Alternative: starting gear 1H followed by 2H, 3H, 4L, 4H, 5L, 5H, 6L, 6H).
- Shift up complete gears at 1500 rpm only in the low range.
- Shift up half gears at 1300 rpm.

### Manual gearbox 16-speed, 40 tonnes:

- Starting gear 2L followed by 4L, 5L, 6L, (6H), 7L, 7H, 8L, 8H.
- Shift up complete gears at 1400 rpm.
- Shift up half gears at 1250 rpm.

## Gear changing when climbing a hill

### AS Tronic gearbox:

- In automatic mode, the AS Tronic gearbox selects the right gear for any situation.
- It is possible to override the automatic gear change:
  - A gear change at lower revs can be influenced by operating the steering column switch.
  - A gear can be retained by using the manual mode.



**NOTE:** In the **AS Tronic Lite control mode**, manual shifting is only possible when:

- The vehicle speed is below 30 km/h.
- Or when the engine brake is active (at any vehicle speed).

### Manual gearbox, 12-speed:

- Do not lose vehicle speed before starting the climb, give full throttle in time.
- Shift down until the engine holds between 1050 and 1350 rpm.  
Watch the rev counter:
  - Shift down a complete gear at 1000 rpm when the revs drop quickly.
  - Shift down half a gear at 1050 rpm when the revs drop slowly.
- At the end of the climb:
  - Shift up half a gear at 1400 rpm when the revs increase slowly.
  - Shift up a complete gear at 1600 rpm when the revs increase quickly.
- Only drive in the top semi-green area of the rev counter momentarily when pulling through in a gear to shift up on a steeper hill.

### Manual gearbox, 16-speed:

- Do not lose vehicle speed before starting the climb, give full throttle in time.
- Shift down until the engine holds between 1050 and 1350 rpm.  
Watch the rev counter:
  - Shift down a complete gear at 1050 rpm when the revs drop quickly.
  - Shift down half a gear at 1050 rpm when the revs drop slowly.
- At the end of the climb:
  - Shift up half a gear at 1350 rpm when the revs increase slowly.
  - Shift up a complete gear at 1500 rpm when the revs increase quickly.
- Only drive in the top semi-green area of the rev counter momentarily when pulling through in a gear to shift up on a steeper hill.

## 7.7 DRIVER PERFORMANCE ASSISTANT (DPA)

The driver performance assistant (DPA) is a feature made possible by all the electronic monitoring and guard functions of the vehicle. It can help the driver get an insight into how the vehicle is used.

It even makes it possible to improve driving performance by giving feedback on topics like anticipation, the use of the vehicle brake functions and fuel consumption.

The DPA is displayed on the master display of the DIP-5 via the screen 'ECO performance'. This screen is selected and activated using the Menu Control Switch (MCS). See sections 'Master display' and 'Menu Control Switch' in the chapter 'Master display'. Once selected the display shows four graphs. 'Anticipation' and 'Efficient wear' show the actual score as a percentage.

This score is measured during what are called events.

An action is registered as an event whenever:

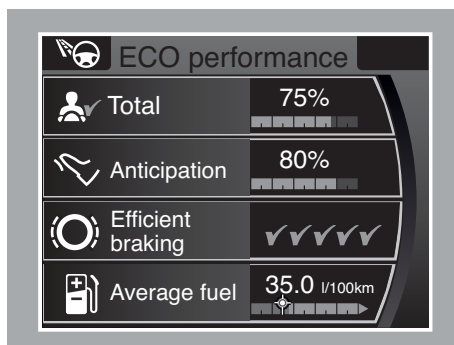
- The vehicle speed decreases by at least 10 km/h.
- A braking lasts for at least 10 seconds (but not during an emergency braking).
- The vehicle speed is reduced to 0 km/h.

If an event is registered, the system provides feedback by showing a number of check marks. These check marks are shown in the graphs followed by a screen message. The number of check marks and the text of the screen message depend on how well the actions were performed.

The average of these two scores is shown as a percentage in the top graph marked 'Total'. The figures of this top graph are also shown in the bottom of the master display when the DPA screen is not activated via the MCS.

The bottom graph shows the 'Average fuel' consumption. This figure is not used to calculate the score on the top graph. It is possible to add a target value to the fuel consumption graph. This target is set in the menu 'Eco settings' which can be selected using the MCS.

The feedback given on the 'Average fuel' consumption graph consists of a colour change of the graph. Green when the average is below and red when the average is over target.



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In addition the DPA provides tips on how to improve vehicle handling. These tips are presented in the form of screen messages. The text of such a message depends on how the vehicle is handled over a given period of time.



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To switch off the DPA, including the screen messages and the graph in the master display, the screen 'ECO settings' must be selected via the MCS. Select 'Coaching' by turning the MCS, then push on the MCS to open the option 'on/off'. By selecting 'off' in this screen, the DPA feedback can be switched off as long as the vehicle ignition stays on. When the ignition is switched off and on again, the DPA feedback is again active.

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## 7.8 FUEL CONSUMPTION DISPLAY

To become more conscious of the relationship between driving style and fuel consumption, relevant information about the fuel consumption and vehicle usage is displayed in the 'Driving support' menu on the master display. A fuel consumption target can be set to help improve the fuel economy. The fuel consumption display consists of two screens:

- Fuel consumption screen.  
This screen is part of the submenu 'Economic driving'.
- Trip info screen  
This screen is part of the main menu on the master display.



*NOTE: For more information about improving fuel economy without sacrificing vehicle performance, see the section 'Driving style'.*

### Fuel consumption screen

#### Activation of the fuel consumption screen

The fuel consumption screen is activated from the 'Driving support' menu using the Menu Control Switch.

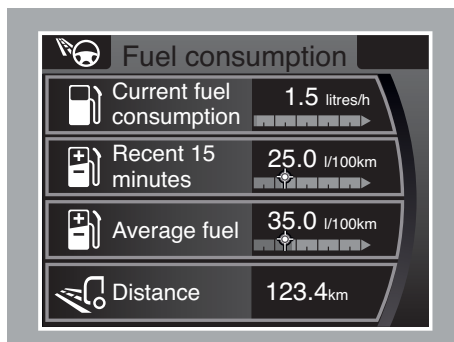
#### Deactivation of the fuel consumption screen

The fuel consumption screen is deactivated when the Menu Control Switch is pressed.

#### Information on the fuel consumption screen

This menu can be activated during driving and displays the following information:





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### – Current fuel consumption

This is the actual fuel consumption displayed in litres per 100 km. This value can vary a lot and is highly dependent on the instantaneous load of the engine. When the vehicle is at standstill, the fuel consumption is displayed in litres per hour.

### – Recent 15 minutes

The average fuel consumption over the last 15 minutes is displayed in litres per 100 km. This value displays a quick result of how the driving style influences the fuel consumption.

After every time the ignition is switched on, '---' is displayed until a reliable value is calculated by the electronics of the vehicle. This can take a short while depending on the load of the engine.

### – Average fuel

The average fuel consumption over this driving style event (DPA event) is displayed in litres per 100 km.



**NOTE:** A driving style event is not only the current drive. It is the total distance travelled since the last reset of the driver performance assistant. See section 'Driver Performance Assistant'.

The average lifespan fuel consumption of the vehicle can be read out in the 'Service info' menu on the master display (see 'Menu overview' in the chapter 'Master display').



**NOTE:** A fuel target can be projected on the average fuel graph. The fuel consumption target is displayed in litres per 100 km. This target can be set in the menu of the master display. Use the target to improve the fuel economy.

See 'Setting the fuel consumption target'.

When the event info has been reset, the average fuel displays '---' for the first 5 km. The event info can be reset in the menu 'Eco settings'.

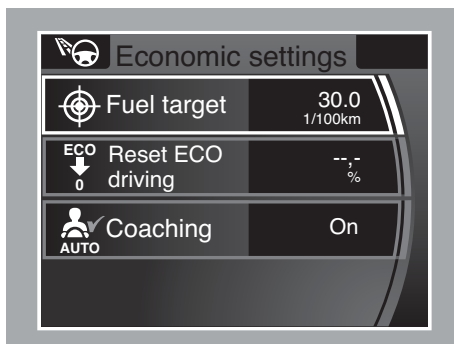
### – Distance

The total distance over this event is given in km.

## Setting the fuel consumption target

The fuel consumption target can be adjusted in the 'ECO settings' menu of the master display. See 'Menu overview' in the chapter 'Master display'.

By turning the Menu Control Switch, the target can be altered. When the vehicle is first taken into service or if the vehicle's settings have been changed by a DAF dealer, it is possible that the target will display '--.-'. In this case, the target needs to be set again.



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## Trip info screen

### Activation of the trip info screen

The trip info screen is activated from the 'Driving support' menu using the Menu Control Switch.

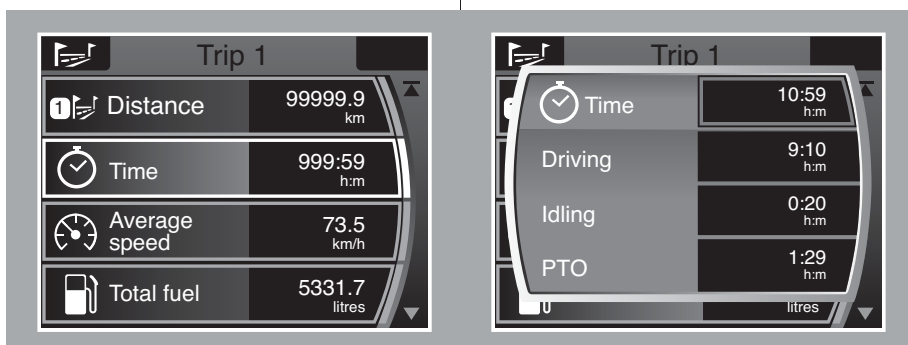
### Deactivation of the trip info screen

The trip info screen is deactivated when the Menu Control Switch is pressed.

### Information on the trip info screen



**NOTE:** The trip info screen displays information about the trip. A trip is not only the current drive. A trip is the total distance travelled since the last reset.



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#### – Distance

This is the total trip distance travelled displayed in km.

## – Time

The time displayed is the total trip time. The trip timer starts counting as soon as the engine is running.

By pushing the Menu Control Switch with this option selected, a menu with details opens showing;

### – Driving

This is the amount of time during the trip that has been used for driving (vehicle not at standstill) when the PTO (if present) is not engaged.

### – Idling

This is the amount of time during the trip when the vehicle is not driving (vehicle at standstill) but the engine is running and the PTO (if present) is not engaged.

### – PTO

This is the amount of time during the trip with the PTO (if present) engaged, both during driving and when the vehicle is at standstill.

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## – Average speed

This is the average vehicle speed during the trip.

## – Total Fuel

This is total trip fuel consumption by the engine displayed in litres.



*NOTE: The real amount of fuel consumed can differ from the displayed fuel consumption because of factors such as:*

- the presence of external fuel consumers such as an auxiliary heater
- changes in ambient temperature
- the fuel consumption displayed is a calculated value

### – Driving

This is the amount of fuel used during the trip that has been used for driving (vehicle not at standstill) when the PTO (if present) is not engaged.

### – Idling

This is the amount of fuel used during the trip when the vehicle is not driving (vehicle at standstill) but the engine is running and the PTO (if present) is not engaged.

### – PTO

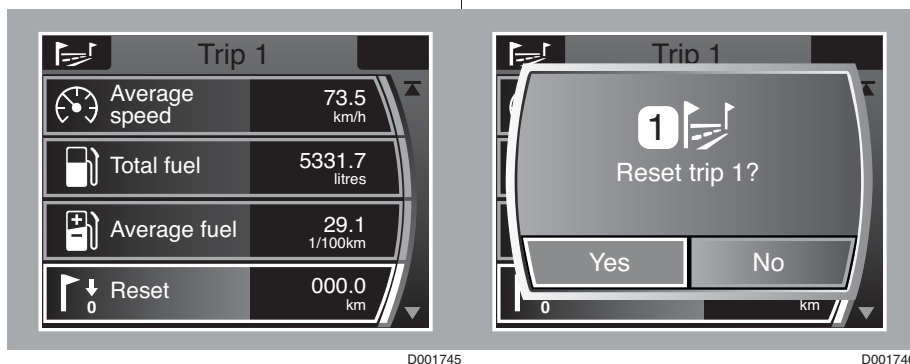
This is the amount of fuel used during the trip with the PTO (if present) engaged, both during driving and when the vehicle is at standstill.

## – Average fuel

This is the average fuel consumption of the trip displayed in litres per 100 km.



*NOTE: When the trip info has been reset, the **Average trip** displays '--.-' for the first 5 km.*



*NOTE: The trip info can be reset using the reset option in the trip info menu.*

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### Automatic trip info reset

The trip info will be reset automatically when:

- the total trip distance exceeds 9999 km ('**Distance**'), or
- the total trip fuel consumption exceeds 9999 litres ('**Fuel consumption**'), or
- the total trip time exceeds 99:59 hours:minutes ('**Time**')



*NOTE: Although it is not advised, the automatic display setting of the fuel consumption display can be disabled by a DAF Service dealer.*

## 7.9 ENGINE IDLE SHUTDOWN

If the vehicle is equipped with engine idle shutdown the engine is automatically switched off after five minutes of engine idling. A timer in the electronics of the engine counts the time. The '**Engine shutdown**' warning is displayed on the master display 30 seconds before the engine is switched off.



*NOTE: If the engine is shut down the ignition is still switched on.*

### Activation conditions:

The engine electronics switches off the engine after five minutes of idling when all of the following conditions are met:

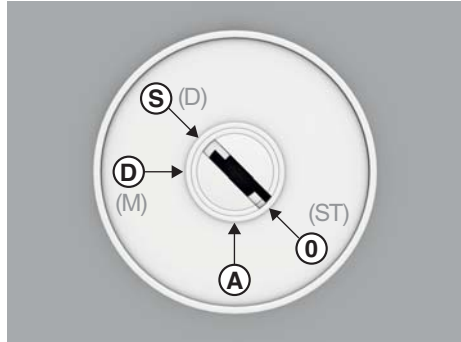
- the vehicle is at standstill.
- the park brake is applied.
- the accelerator pedal is not operated.

- the brake pedal is not applied.
- the clutch pedal is not applied.
- the Engine Speed Control is not active.

If any of the above-mentioned statuses change, the engine electronics stops counting and resets the timer. As soon as the conditions are met again, the engine electronics resumes counting.

### Restarting the engine

First turn the key fully back to the position 0 (St). Then restart the engine.



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## 7.10 ENGINE SPEED CONTROL

### Engaging and disengaging conditions for Engine Speed Control

#### Engaging Engine Speed Control

Engine Speed Control can be engaged when:

- Park brake applied.
- Clutch pedal not operated (not applicable for AS Tronic).
- Brake pedal not operated.
- Vehicle speed.
- Accelerator pedal position.
- MX Engine Brake disengaged.
- Engine speed.

#### Disengaging Engine Speed Control

Engine Speed Control is disengaged when:

- The park brake is released.
- AS Tronic gearbox is switched from neutral (N) to a gear.
- The clutch is operated (not applicable for AS Tronic).
- The brake pedal is operated.
- The vehicle speed is too high.
- PTO speed control is active via the superstructure.
- The MX Engine Brake is engaged.



**NOTE:** If one or more of the above conditions are met, it is not possible to engage the Engine Speed Control.

## Accelerator pedal function during Engine Speed Control

When the Engine Speed Control is active, the engine speed can be increased above the control speed using the accelerator pedal. When the accelerator pedal is released, the engine speed returns to the last valid control speed.

A DAF Service dealer can modify these conditions to meet the customer's requirements.

## Control by steering wheel switches

### Engaging the Engine Speed Control

Press switch (3) to engage the engine speed at the programmed value. There are two programmed engine speeds available (ex-factory 800 and 1200 rpm). It is possible to toggle between the two programmed values by pressing switch (3). The programmed values can be changed within specific limits by a DAF Service dealer according to the customer's requirements.



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### Altering the Engine Speed Control

Briefly press switch (1) to increase the engine speed or switch (2) to decrease the engine speed in small increments of 25 rpm.

Hold down switch (1) to gradually increase the engine speed and hold down switch (2) to gradually decrease the engine speed by approximately 200 rpm per second. After briefly pressing or holding down the switch, the current engine speed is set as the new value.

The programmed minimum and maximum values in the electronics limit the engine speeds that can be set. These values can be modified within specific limits by a DAF Service dealer.

### Disengaging the Engine Speed Control

Press switch (4) to disengage the Engine Speed Control. If one or more of the disengaging conditions are met, the Engine Speed Control is also disengaged.

## 7.11 CRUISE CONTROL

The cruise control can be used to drive at a constant speed. The desired driving speed is set, and the electronics maintain this speed. The driver can override the cruise control at any time by depressing the accelerator pedal or by applying the brakes.

### Adaptive Cruise Control (ACC)

ACC is an addition to the cruise control and is preselected on, as soon as the ignition of the vehicle is switched on. When the cruise control is engaged, ACC is also engaged. ACC can be switched off by pressing the ACC on/off switch on the control panel. If the cruise control is then activated, the ACC is not activated.

For more information about ACC, see chapter 'Adaptive Cruise Control (ACC)'.

## Engaging and disengaging conditions for the cruise control

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### Engaging conditions

The cruise control can be engaged when all of the following conditions are fulfilled:

- The engine is running.
- The vehicle speed exceeds 30 km/h (18 mph) (ex-factory).
- No braking functions are active.
- Variable speed limiter is not active.
- Forward Collision Warning of the ACC is not active.
- Vehicle Stability Control (VSC) is not active.
- Anti Slip Regulation (ASR) is not active.
- The drive line is not interrupted by the driver (clutch pedal operated, neutral gear selected if AS Tronic).

### Disengaging conditions

The cruise control is disengaged by any of the following conditions:

- Engine is not running.
- The vehicle speed falls below 25 km/h (16 mph) (ex-factory).
- The park brake or brake pedal are operated.
- Steering wheel switch OFF is operated.
- Variable speed limiter is active.
- Forward Collision Warning is active.
- Vehicle Stability Control (VSC) is active.
- Anti Slip Regulation (ASR) is active for 3 seconds.
- The drive line is interrupted by the driver (clutch pedal operated, neutral gear selected if AS Tronic) unless a manual gear shift is executed within a few seconds.



**NOTE:** A DAF Service dealer can change the vehicle speed settings for activation and/or deactivation of the cruise control to the customer's requirements.

## Control by using the steering wheel switches



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### Engaging the cruise control

Engage the cruise control by briefly pressing switch (1).

The current vehicle speed is set as the cruise speed which is shown in the master display. The setting disappears from the master display after three seconds, but remains visible in the speedometer display of the instrument panel. The settings disappear from the speedometer as soon as the cruise control is disengaged.

### Altering the cruise control speed

Briefly press switch (1) to increase the vehicle speed or switch (2) to decrease the vehicle speed in small increments.

Hold down switch (1) to increase the vehicle speed or switch (2) to decrease the vehicle speed. After briefly pressing or holding down the switch, the current vehicle speed is set as the new cruise control speed value.

Values programmed in the electronic control unit determine the minimum and maximum adjustable speeds.

### Accelerator pedal function during cruise control

When the cruise control is active, the vehicle speed can be increased using the accelerator pedal. When the accelerator pedal is released, the vehicle speed returns to the last valid cruise control speed.

When the vehicle speed is increased with the accelerator pedal above the cruise speed for longer than 3 minutes, the cruise control function is disengaged.





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## Disengaging the cruise control

Press switch (4) to disengage the cruise control. The speedometer of the instrument panel no longer shows the set speed.



*NOTE: Cruise control does not deactivate when the downhill speed control is active.*

## Re-engaging the cruise control (resume)

When the cruise control is disengaged, press switch (2) to re-engage the cruise control. If the engaging conditions are met, the cruise control is re-engaged at the last set speed. If the current vehicle speed is less than the last set speed, the vehicle accelerates to the programmed set speed.



*NOTE: When re-engaging the cruise control bring the vehicle back to cruising speed using the accelerator pedal first before pressing switch (2).*



*NOTE: If the vehicle ignition has been switched off, the set speed is erased.*

## Using the cruise control

If properly used the cruise control has a positive influence on fuel economy. Use the cruise control as soon as it is possible to drive for a longer period at a constant speed. It is advisable **not** to use the cruise control when driving in urban areas.



*NOTE: Using the cruise control incorrectly can lead to increased fuel consumption.*

## 7.12 VARIABLE SPEED LIMITER

The variable speed limiter allows the vehicle speed to be limited to a speed set by the driver.

The variable speed limiter can be engaged once the vehicle speed exceeds 25 km/h (16 mph).



**NOTE:** When the variable speed limiter is engaged, the cruise control function is deactivated.

### Control by steering wheel switches

#### Engaging the variable speed limiter

By pressing switch (3), the current vehicle speed is stored in the electronics as the required vehicle speed control value. This speed is shown in the master display while the variable speed limiter function is active.



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#### Altering the variable speed limiter

Briefly press switch (1) to increase the vehicle speed or switch (2) to decrease the vehicle speed in small increments.

Hold down switch (1) to increase the vehicle speed gradually and hold down switch (2) to decrease the vehicle speed gradually. After briefly pressing or holding down the switch, the current vehicle speed is set as the new value.

#### Disengaging the variable speed limiter

The variable speed limiter is disengaged when:

- The switch (4) is pressed.
- The accelerator pedal is temporarily fully depressed, whereby the kick-down switch in the accelerator pedal sensor is operated. For instance, to enable a passing or dodging manoeuvre.



**NOTE:** The vehicle speed limiting function is activated again when the vehicle speed falls below the variable speed limit saved last. This speed is shown in the master display while the variable speed limiter function is active.

## 7.13 DIFFERENTIAL LOCK

### General

Differential locking is possible:

- Between two driven rear axles: inter-axle lock.
- Between the left-hand wheel and right-hand wheel of a rear axle: cross-axle lock.

### Directions for use



#### CAUTION:

- ***Never engage the differential lock while there is wheel slip. Always wait until the wheel has stopped spinning before engaging the differential lock.***

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***Engaging the differential lock while there is wheel slip on one of the axles can lead to damage to the differential and/or differential lock.***



#### CAUTION:

- ***Disengage the differential lock as soon as firm ground is reached. If the warning lamp stays on, drive forward and then reverse a short distance to release the locking mechanism.***

***Driving on firm ground with the differential lock engaged can lead to damage to the differential and/or axle shafts.***

A differential lock may only be used when driving on **soft ground** or on a **slippery road surface**, and never on firm ground.



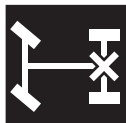
#### Inter-axle differential lock

If present, the inter-axle differential lock must be locked first.

The inter-axle lock must be engaged:

- With the vehicle stationary.
- With the clutch pedal depressed.
- With the gearbox in Neutral (N) position in case of vehicles with an AS Tronic gearbox.

If this does not prove effective, the cross-axle lock must also be engaged.



#### Cross-axle lock

The cross-axle lock must be engaged:

- With the vehicle stationary.
- With the clutch pedal depressed.
- With the gearbox in Neutral (N) position in case of vehicles with an AS Tronic gearbox.

Disengage the differential locks as soon as firm ground is reached.

## 7.14 BRAKES

### Park brake and service brake



**WARNING!** Not applying the park brake after parking the vehicle can cause the vehicle to move unintentionally. This can lead to serious injury and damage to the vehicle.

- Always apply the park brake after parking the vehicle.



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**NOTE:** The vehicle is equipped with a park brake warning system. If the driver's door is opened while the engine has been switched off and the park brake has not been applied, an acoustic signal is given and a warning symbol is shown on the instrument panel.



**WARNING!** If the park brake is released while the steering lock is still engaged, the vehicle cannot be steered when rolling off. This can lead to serious injury and damage to the vehicle.

- Do not release the park brake while the steering lock is still engaged.



**WARNING!** Engaging the park brake when driving on a slippery road surface may cause the engine to stall. Any emergency steering mechanism can then no longer be used. This can lead to unstable vehicle behaviour resulting in very dangerous situations.

- Do not apply the park brake when driving on a slippery road surface.
- While driving, the park brake may only be used as an emergency brake.

The service brake is operated by the brake pedal. If the service brake fails to operate owing to insufficient air pressure, the park brake can be used as an emergency brake. Moving the park brake handle slowly backwards as far as the stop will gradually brake the vehicle or combination in a controlled manner.

The park brake is engaged by moving the park brake handle back past the locking cam. On a vehicle with a trailer connection, the park brake has a test position. See section 'Stopping procedure'. The park brake is disengaged by lifting up the lock against the spring pressure and letting the park brake handle move forward.

The vehicle has an EBS brake system. The EBS system is an electronically controlled brake system that comes integrated as standard with:

- Anti-lock Brake System (ABS)

- brake assist
- Anti-Slip Regulation (ASR).
- Vehicle Stability Control (VSC).

and depending on the vehicle configuration:

- brake performance monitoring.
- third brake integration.
- Hill Start Aid.



**WARNING!** *If the warning symbol 'EBS fault' is activated, there is a fault in the EBS system of the truck or trailer. Ignoring this warning may lead to a reduced braking power and a longer braking distance. This can lead to very dangerous situations.*

- *Contact the nearest DAF Service dealer as soon as possible if this warning occurs.*

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**WARNING!** *If there is a fault in the EBS system, the pneumatic back-up system may be activated. The brake pedal force and travel required to brake the vehicle may increase. The ABS function may be deactivated.*

## EBS warning symbol in master display

There is an EBS warning symbol in the master display.

For the function of the warning symbol, see chapter 'Master display'.

## ABS control

The ABS control is an anti-lock braking control.

The ABS ensures good braking stability and good steering in critical braking situations. By preventing the wheels from locking, the steering characteristics of the vehicle are retained.

When only one unit is equipped with ABS control, the directional stability and steering characteristics are not as good as when both units are equipped with ABS.



**WARNING!** *ABS control does not release the driver from the obligation to adapt the driving style to the traffic and road surface conditions. The anti-lock protection cannot offset the results of driving too close to the vehicle in front or taking a bend at too high a speed. Occasionally, but not always, the braking distance is shorter with ABS control. Ignoring these matters can lead to very dangerous situations not only for the driver but also for other road users.*

- *Do not adapt the driving style to the knowledge of having ABS control.*
- *Do not brake later and harder. This only causes unnecessary tyre wear. It may also be extra hazardous for other road users.*

## Brake assist

Brake assist operates in emergency situations. If the brake pedal is rapidly depressed, the EBS system will increase the brake pressure to a higher level.

## Brake performance monitoring

During braking, the EBS system checks the brake performance of the vehicle or vehicle combination.



If the vehicle or vehicle combination does not have the normal brake performance, the '**Low brake performance**' warning is shown on the main display.

Reduced brake performance can be caused by defective brakes, for example worn-out disk brakes or overheated drum brakes. It can also be caused by severe overloads of the vehicle or vehicle combination.

The warning remains active until the EBS system has determined that the normal brake performance has returned.

When the 'Low brake performance' warning is active, you may not be able to brake as hard as you might otherwise expect. Adapt the driving style and drive cautiously. Brake using the engine brake and/or the retarder as much as possible. If the message cannot be logically explained from the loading situation or earlier braking behaviour, get the brake system checked as soon as possible.

## Third brake integration

If the vehicle is fitted with a retarder or engine brake, third brake integration is automatically available in the EBS system. The EBS system can use braking torque support from the retarder or engine brake when the service brake is applied. This has a positive effect on the service life of the brake linings.

## 7.15 ENGINE BRAKE

The engine brake can, besides an exhaust brake, contain an MX Engine Brake.

The engine brake is primarily intended for prolonged braking, for example when decelerating from high speed on a level road or when driving downhill. This reduces service brake wear.



*NOTE: The engine cannot be switched off with the engine brake.*

## Brake effect

The engine brake has the **greatest braking performance** in the engine speed range in the **blue area** of the rev counter. The braking performance decreases as the engine speed falls.



## CAUTION:

- Do not operate the engine in the red area of the rev counter.

**Exceeding the permitted engine speed may seriously damage the engine.**

## Vehicle with manual gearbox

When using the engine brake, adjust the gear selection so that the engine speed remains in the blue area of the rev counter.

The braking performance decreases as the engine speed decreases.

## Vehicle with AS Tronic gearbox

When operating the engine brake in the fully automatic mode, AS Tronic tries to keep the engine speed in the blue area of the rev counter.

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In the manual mode, AS Tronic does not automatically shift down to the ideal speed range for the engine brake when the engine brake is operated. When using the engine brake, adjust the gear selection so that the engine speed remains in the blue area of the rev counter.



**NOTE:** The engine brake does not function when the AS Tronic gearbox changes from one gear to another. The vehicle may accelerate when driving downhill.



**CAUTION:** The vehicle speed may increase when travelling downhill. In fully automatic mode, the AS Tronic gearbox selects a higher gear to protect the engine against excessive engine speed. If the gearbox is in manual mode, the engine speed can exceed the maximum permitted engine speed. This can lead to serious damage to the engine.

- With the gearbox in manual mode, select a higher gear to prevent the engine from exceeding the maximum engine speed (red area of the rev counter).

## Engaging conditions

A number of conditions must be met to engage the engine brake:

- The engine speed must be more than 1000 rpm.
- The oil temperature must be more than 5°C and the coolant temperature must be more than 15°C.
- The boost pressure of the engine must not exceed 1.2 bar.
- The temperature of the inlet air after the intercooler must not exceed 75°C.



## NOTE:

- When the temperature of the inlet air after the intercooler is too high, the braking force of the MX Engine Brake is reduced.
- The MX Engine Brake is disengaged when the temperature exceeds 75°C. The exhaust brake remains active.

The engine brake is automatically switched off:

- If the engine speed is less than 800 rpm **or** the vehicle speed is less than 3 km/h (1.9 mph).
- If the ABS control is active.
- If the engine speed is above 2300 rpm.



**NOTE:** When the engine speed exceeds 2200 rpm, the braking force of the MX Engine Brake is reduced.

## Activation of the engine brake

There is always an engine brake switch for activating the engine brake. Depending on the vehicle configuration, there also may be an operating function using the right-hand steering column switch.

### Using the engine brake switch

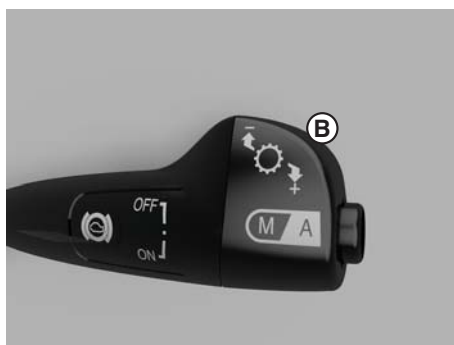
The engine brake is activated when the engine brake switch is depressed.



D001817

### Using the steering column switch

On vehicles without intarder, the engine brake also can be operated with the right-hand steering column switch. Briefly move the switch to position 'ON' to activate the engine brake.



D001620

When the engine brake is activated using the 'ON' position, the engine brake is automatically deactivated when:

- The clutch is operated.



- The vehicle is switched to neutral gear.
- The accelerator pedal is depressed.

Briefly move the steering column switch to position 'OFF' to deactivate the engine brake.



*NOTE: If the ABS control is activated, the engine brake switches off as long as the control is in operation. On vehicles where the ABS control fails to function, use of the engine brake increases the risk of skidding on slippery surfaces.*

## 7.16 RETARDER

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The retarder is a wear-resistant, hydraulic continuous brake. It is primarily intended for use in **prolonged braking**, for example when decelerating from high speed on a level road or when driving downhill. This reduces service brake wear.



**WARNING!** *The retarder does not exert braking power at idling or low speeds. Using the retarder as a park brake can lead to a collision, resulting in injury and/or damage to the vehicle.*

- *Do not use the retarder as a park brake.*



**WARNING!** *The use of the service brake for prolonged braking can result in overheating of the wheel brakes. This can lead to serious damage to the wheel brakes and result in temporarily decreased brake performance of the service brake and dangerous situations.*

- *Use the retarder for prolonged braking, for example when driving downhill.*
- *If possible, use the service brake for relatively short braking operations when driving downhill.*



**WARNING!** *The use of the retarder increases the temperature of the cooling system. To avoid overheating of the cooling system, the braking performance of the retarder might be reduced or even shut off. This can lead to dangerous situations.*

- *If the retarder braking performance is reduced or shut off due to overheating, use the service brake to reduce vehicle speed.*
- *Keep the engine speed high (more than 1500 rpm) to decrease the temperature of the cooling system.*
- *Avoid overheating of the cooling system by not setting the steering column switch higher than position A or B on long downhill slopes. Brake in time by momentarily using the service brake and don't let the vehicle speed increase too much.*

## Brake effect

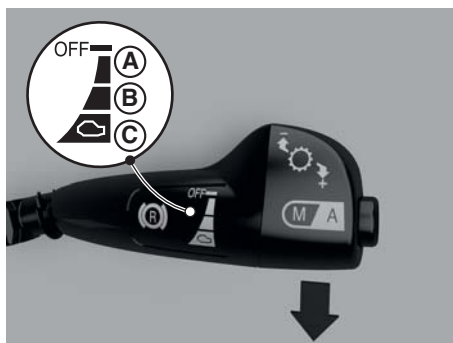
The maximum braking performance from the retarder is not available at low vehicle speeds.

## Engaging the retarder

Engage the retarder by moving the right-hand steering column switch down. The retarder has four positions (OFF, A, B and C).

The braking steps of the retarder are as follows:

1. 'OFF' position:  
the retarder is not active (0%).
2. Position A:  
approximately 40% of the maximum braking performance.
3. Position B:  
approximately 80% of the maximum braking performance.
4. Position C:  
the maximum braking performance (100%).  
Under certain conditions the engine brake is also activated in position C.



D001622

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**CAUTION:** *Although the wheels do not lock easily, there may be a danger of skidding when the retarder is used on deteriorated roads.*  
– **Reduce the use of the retarder braking force as road conditions deteriorate.**

When no longer using the retarder, return the steering column switch to the 'OFF' position.

Using the engine brake in combination with the retarder improves the braking performance. Keep the engine speed high!

## Disengaging the retarder

Disengage the retarder by moving the steering column switch up to the 'OFF' position.



**NOTE:** *When ABS is active, the retarder switches off for as long as ABS is in operation.*

## 7.17 DOWNHILL SPEED CONTROL

Downhill Speed Control keeps the desired vehicle speed at a constant level during descents.

Depending on the vehicle configuration, the Downhill Speed Control function deploys braking power using the retarder or the MX Engine Brake in combination with AS Tronic.

### Vehicle with AS Tronic and MX Engine Brake

#### Engaging conditions

Downhill Speed Control can be engaged when the vehicle speed exceeds 30 km/h (19 mph).

#### Disengaging conditions

Downhill Speed Control is disengaged when:

- The steering wheel switch OFF is pressed.
- The cruise control speed is set higher than the Downhill Speed Control speed.
- The vehicle speed falls below 25 km/h (15 mph).
- The accelerator pedal is operated for a certain time and the speed exceeds the Downhill Speed Control speed, without interruption of the drive line.

If the speed of the vehicle increases, the exhaust brake valve is first actuated. If the speed still increases, the MX Engine Brake valves are also actuated to maintain the desired Downhill Speed Control speed. At the same time AS Tronic selects the right gear for the optimum speed range for engine brake operation. If the speed decreases, the MX Engine Brake valves are deactivated first to maintain the desired Downhill Speed Control speed. If the speed decreases further, the exhaust brake valve is deactivated as well.

### Vehicle with retarder



**CAUTION:** *The use of the retarder increases the temperature of the cooling system. To avoid overheating the cooling system, it is possible that the braking performance of the retarder might be reduced or even shut off. This can lead to dangerous situations.*

- *If the retarder braking performance is reduced or shut off due to overheating, use the brake pedal to reduce vehicle speed.*
- *Keep the engine speed high to decrease the temperature of the cooling system.*

#### Engaging conditions

Downhill Speed Control can be engaged when the vehicle speed exceeds 30 km/h (19 mph).

## Disengaging conditions

Downhill Speed Control is deactivated when:

- The cruise control speed is set higher than the Downhill Speed Control speed.
- The accelerator pedal is operated for a certain time and the speed exceeds the Downhill Speed Control speed, without interruption of the drive line.



If the green warning indicator on the instrument panel is visible, the retarder is active.

The retarder is deactivated once the vehicle speed falls below the set speed; however, the function remains active.

So when the vehicle speed exceeds the set speed, the retarder is activated again.



### NOTE:

- With Downhill Speed Control the maximum braking torque can be reached.
- When ABS is in use, the retarder switches off for as long as ABS is in operation.

## Control by steering wheel switches



D001691

## Engaging the Downhill Speed Control

By pressing switch (5), the current vehicle speed is stored in the electronics as the required Downhill Speed Control value. The current vehicle speed is stored in the electronics and is shown in the master display while the Downhill Speed Control is active.

If the cruise control is also active, the Downhill Speed Control speed is set approximately 3 km/h (1.9 mph) higher than the cruise control speed.

## Altering the Downhill Speed Control

Briefly press switch (5) to increase the downhill speed or switch (6) to decrease the downhill speed in small increments of 1 km/h (0.5 mph).

Hold down switch (5) to increase the downhill speed gradually, and hold down switch (6) to decrease the downhill speed gradually. After briefly pressing or holding down the switch, the current vehicle speed is set as the new value.

### Disengaging Downhill Speed Control

Press switch (4) to disengage Downhill Speed Control.

### Re-engaging Downhill Speed Control (resume)

When Downhill Speed Control has been disengaged, it can be re-engaged, provided the engaging conditions are met, by briefly pressing control switch (6). This re-engages Downhill Speed Control at the last set speed. The set speed is shown in the instrument panel while the Downhill Speed Control is active.

Downhill speed control is also re-engaged, providing the engaging conditions are met, by holding down switch (5) or (6).

## 7

## 7.18 ECOROLL FUNCTION

EcoRoll is a function of the AS Tronic gearbox designed to increase fuel savings. These fuel savings are achieved by gaining extra momentum on slightly descending slopes. At the bottom of the slope this extra momentum is then used to coast (roll) over a larger distance before the throttle must be used again. Therefore fuel is saved.

The EcoRoll function is constantly active when cruise control is on and engaged by the AS Tronic, if the right conditions are met.

These conditions include, amongst others, the vehicle mass and the slope gradient (usually less than 1%) and are closely monitored by the vehicle's electronic systems. EcoRoll only functions when the cruise control is active and within a specific vehicle speed window. This window is determined by, amongst other things, the difference between the downhill speed control set speed (if set) and the cruise control set speed. Outside this window EcoRoll switches itself off.

The greater the difference in the set speeds of downhill speed control and cruise control, the greater the EcoRoll fuel savings.

Furthermore, EcoRoll is switched off by any action either by the driver or by the vehicle's electronic systems. Examples of such actions are the driver using a brake function or the activation of downhill speed control. After braking by the driver, EcoRoll will not be engaged again on the same slope.



*NOTE: When EcoRoll is engaged, the 'selected gear' warning indicator on the DIP-5 switches to 'N' and the engine speed drops to idle.*

Under specific circumstances (for example, continuous downhill or uphill driving) the EcoRoll function might not be desired.

In this situation the EcoRoll function can be deactivated in the 'settings' master display menu under 'speed control'.

After the contact is switched off and on, the EcoRoll function is automatically activated again.



*NOTE: Deactivating the EcoRoll function increases the fuel consumption.*

## 7.19 HILL START AID

If the vehicle is equipped with an AS Tronic gearbox, it also has Hill Start Aid. Hill Start Aid can be used when driving off on a hill, without having to use the park brake.

Hill Start Aid becomes active when:

- The ignition is 'on'.
- The Hill Start Aid switch is 'on'.
- The vehicle is stopped.
- The brake pedal is applied.
- The park brake is not applied.

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Hill Start Aid remains active (brake boosters activated) as long as the foot brake is briefly operated. The warning **'Hill Start Aid active'** is shown on the master display. If the brake pedal is released and the accelerator pedal is depressed, the vehicle drives off and the warning **'Hill Start Aid active'** disappears.



*NOTE: Depress the accelerator pedal to the full throttle position when driving off in a fully loaded vehicle.*

## Liquid transport

It is also advisable to use Hill Start Aid when driving with liquid transport on a level road. During and after stopping the vehicle, loads like oscillating liquid in a tank can start moving backwards and forwards. This results in a mass shift, which can unexpectedly move the vehicle.

Hill Start Aid remains active (brake boosters activated) after a vehicle stop, and prevents the vehicle from moving until the accelerator pedal is depressed and the vehicle drives off smoothly.

## Engaging conditions

Hill Start Aid can be engaged when:

- The Hill Start Aid switch is in the 'enabled' position.
- The vehicle is at standstill.
- The park brake is released.
- The brake pedal is applied.
- ABS has not been activated during the last stop.

### Disengaging conditions

Hill Start Aid is disengaged when:

- The Hill Start Aid switch is in the 'disabled' position.
- The ignition is switched off.
- The park brake is applied.



*NOTE: If all of the available pedals (accelerator, brake and clutch) are released, the **'Brake release'** warning is shown on the master display and the brakes are released. Once the brake pedal is depressed again, Hill Start Aid becomes active again.*

### Engaging and disengaging Hill Start Aid



Use the switch on the control panel to engage or disengage Hill Start Aid.





## 8.1 ADAPTIVE CRUISE CONTROL (ACC)

### 8.1.1 Introduction

Adaptive Cruise Control (ACC) is an addition to the cruise control that allows automatic speed and/or distance adaptation to the vehicle ahead.

Adaptive Cruise Control is intended for motorway and dual carriageway driving.

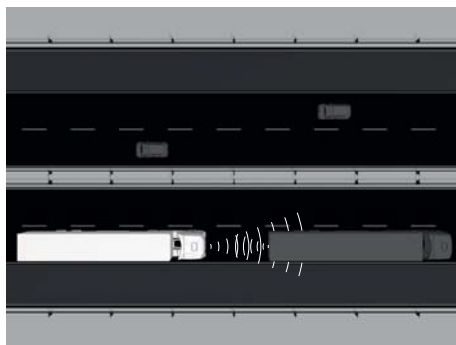
If ACC detects a vehicle ahead driving at a lower speed, the speed of the vehicle is automatically reduced. ACC uses a radar sensor for detection. See section 'AEBS/ACC sensor' in chapter 'Warnings and safety regulations'.

The vehicle now drives at the same speed as the vehicle ahead and at a preset distance behind it (depending on the vehicle speed). The set speed for the (Adaptive) cruise control remains stored. As soon as the traffic conditions allow it, the vehicle automatically accelerates back to the stored (Adaptive) cruise control speed.

### 8 Object detection

The radar sensor can detect objects up to 150 metres in front of the vehicle. The radar sensor measures speed, distance and lateral position of the vehicle in front. To determine what 'relevant' objects are, ACC divides all objects into three categories:

- Moving in the same direction.
- Moving in the opposite direction.
- Stationary.



D001696



**NOTE:** The ACC system only 'reacts' to objects in the 'Moving in the same direction' category.



**NOTE:** ACC does not react to objects moving away from the vehicle (overtaking vehicles, for example). This is because the distance between them is increasing rather than decreasing.



**NOTE:** Vehicles with a low reflection (for example, motorcycles) may be more difficult for the ACC to identify.

### Speed adaptation

If ACC detects a vehicle ahead driving at a lower speed, the speed of the driven vehicle is automatically reduced to the same speed as the vehicle ahead.

The following measures are taken for speed reduction, in the given order:

1. Reduction of engine torque.
2. Activation of the engine brake.
3. Activation of the interarder.
4. Activation of the service brake.

As a result of these measures, the gearbox may automatically shift down.

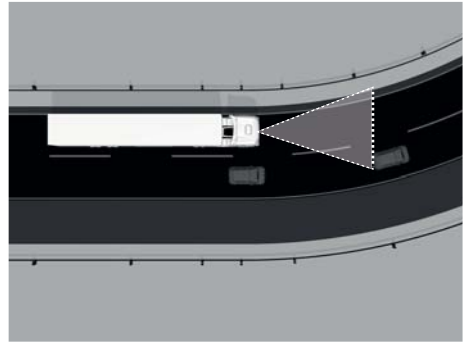


**CAUTION:** ACC does NOT brake the vehicle to a standstill. If necessary, the ACC system brakes the vehicle down to 25 km/h (16 mph). Below this speed the ACC system is automatically switched off.

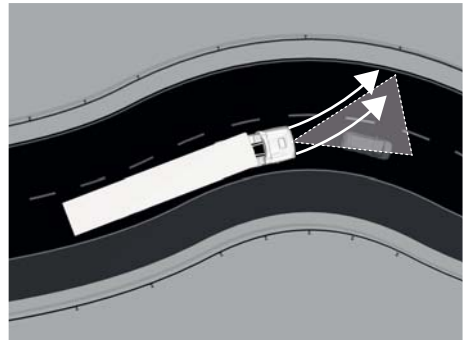
## 8.1.2 Traffic situations

### Bends

At bends, as well as before and after bends, it can be difficult for the ACC to identify objects ahead. The vehicle may brake unexpectedly or 'too' late. If the vehicle speed in a bend is too high, the vehicle speed is reduced with engine torque reduction.



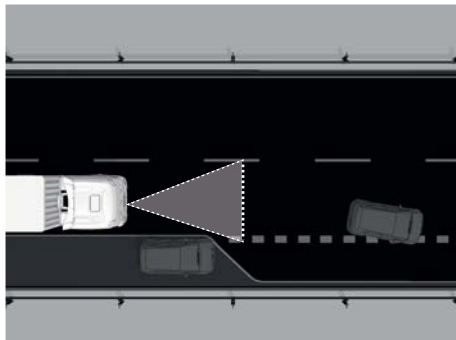
D001697



D001698

### Driving on a different lane, hard shoulder or exits

The Adaptive Cruise Control (ACC) may react to vehicles on the hard shoulder, at the side of the road or at exits and brake unnecessarily or 'too' late.



D001699

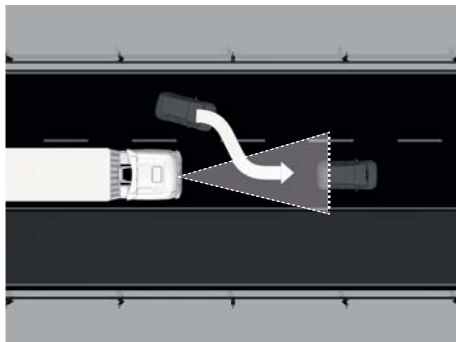
### Lane changes

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Other vehicles that are switching lanes immediately in front of the vehicle are not identified by the ACC until they are in the identification zone. In this situation, it may be necessary to use the service brake to increase the distance to the vehicle which is switching lanes.



*NOTE: Vehicles with a low reflection (for example, motorcycles) may be more difficult for the ACC to identify.*



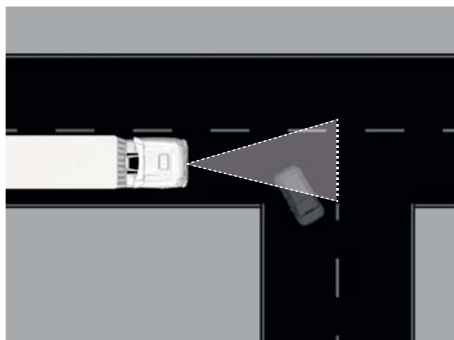
D001700



*NOTE: ACC does not react to objects moving away from the vehicle (overtaking vehicles, for example). This is because the distance between them is increasing rather than decreasing.*

## Vehicles cornering ahead

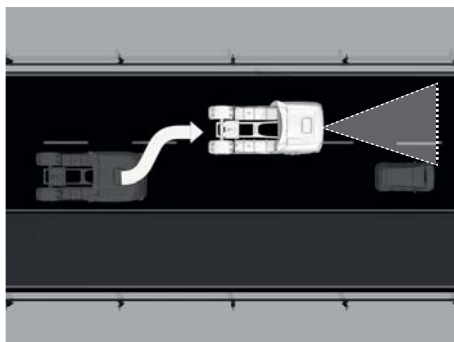
When approaching junctions and exits, vehicles may be detected cornering ahead. ACC may react to these cornering vehicles and brake unnecessarily or 'too' late.



D001701

## Overtaking

During the process of overtaking the sensor may fail to detect a vehicle ahead. The distance to the offset vehicle ahead is too short. In this situation, the service brake must be used to increase the distance to the vehicle ahead or the lateral offset must be increased.



D001703

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### 8.1.3 Engaging and disengaging Adaptive Cruise Control (ACC)



#### **WARNING!**

- *Do not adapt your driving style to the knowledge of having Adaptive Cruise Control (ACC).*

*ACC is merely a driving aid with certain limitations. ACC cannot prevent accidents and it does NOT replace the driver's professional judgement of the actual traffic situation. It is the driver who is and remains at all times responsible for the proper operation of the truck.*



### **WARNING!**

- *The driver remains responsible for braking the vehicle under all circumstances.*

*ACC controls the distance to moving vehicles ahead and not to stationary objects on the road. The vehicle will not brake for stationary objects or for oncoming traffic. ACC cannot bring the vehicle to a complete stop. Ignoring these matters can lead to very dangerous situations (such as a collision) for the driver but also for other road users.*



### **WARNING!**

- *Do not use ACC when towing a trailer with no or no functional ABS.*



### **WARNING!**

- *The driver remains responsible for keeping a safe distance from the vehicle ahead in all situations.*

*It can be difficult for ACC to identify vehicles before bends as well as after bends. For this reason the vehicle may brake unexpectedly or too late. Not keeping a safe distance to the vehicle ahead can lead to very dangerous situations (for example a collision). This is true not only for the driver but also for other road users.*

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## Engaging ACC



ACC is preselected on, as soon as the ignition of the vehicle is switched on. When the cruise control is engaged, ACC is also engaged. ACC can be switched off by pressing the ACC on/off switch on the control panel. If the cruise control is then activated, the ACC is not activated.

## Engaging and disengaging conditions for ACC

### Engaging conditions

When all of the following conditions are met, ACC can be engaged:

- The ACC on/off switch is not operated.
- The engine is running.
- The vehicle speed exceeds 25 km/h (16 mph) (ex-factory).
- No braking functions are active.
- Variable speed limiter is not active.
- Forward Collision Warning is not active.
- Vehicle Stability Control (VSC) is not active.
- Anti Slip Regulation (ASR) is not active.
- The drive line is not interrupted by the driver (clutch pedal operated, neutral gear selected if AS Tronic).

### Disengaging conditions

When one of the following conditions is met, ACC is disengaged:

- The ACC on/off switch is operated.
- Engine is stopped.

- The vehicle speed drops below 25 km/h (16 mph) (ex-factory).
- The park brake or brake pedal are operated.
- Steering wheel switch OFF is pressed.
- Variable speed limiter is active.
- Forward Collision Warning is active.
- Vehicle Stability Control (VSC) is active.
- Anti Slip Regulation (ASR) is active for 3 seconds.
- The drive line is interrupted by the driver (clutch pedal operated, neutral gear selected if AS Tronic) unless a manual gear shift is executed within a few seconds.

## Driving with ACC



*NOTE: Adaptive Cruise Control is intended for motorway and dual carriageway driving. See 'Object detection' in section 'Introduction'.*

### ACC engaged and target detected

This information screen is available on the master display by using the Menu Control Switch. It shows the speed of the target and the distance to the target. The indication bar shows the driver set distance. ACC adapts the set speed to the target speed until the preset distance is reached.



D001695-2

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### ACC system switched off



D001726-2

This information screen '**ACC system switched off**' is active on the master display for a few seconds when:

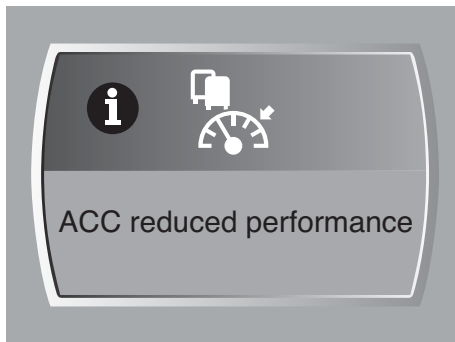
- The vehicle speed drops below 25 km/h (16 mph).
- The ABS/ASR control or the VSC system is activated.

### ACC system reduced performance

If ACC uses the service brakes frequently over a long period, this information screen '**ACC reduced performance**' can be active on the master display.

This situation occurs for example during prolonged downhill driving.

If braking is still needed, the driver must take over control by for example using the service brakes.



D002165

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*NOTE: When no action is taken, ACC eventually switches off and the information screen '**ACC system malfunction**' might appear on the master display.*

## 8.1.4 Distance setting to the vehicle ahead



### **WARNING!**

- *The driver remains responsible for keeping a safe distance from the vehicle ahead in all situations.*
- *Adapt the distance to the vehicle ahead to the weather conditions.*

*The distance between the vehicle and the vehicle ahead is not automatically adapted by Adaptive Cruise Control (ACC) during different weather conditions (for example fog, snow, heavy rain and so on). Not keeping a safe distance to the vehicle ahead can lead to very dangerous situations (like a collision). Not only for the driver but also for other road users.*

## Distance to the vehicle driving ahead

When ACC is engaged, the electronics automatically set and keep a distance of 50 metres / 2 seconds to the vehicle driving ahead.

### Altering the distance to the vehicle driving ahead

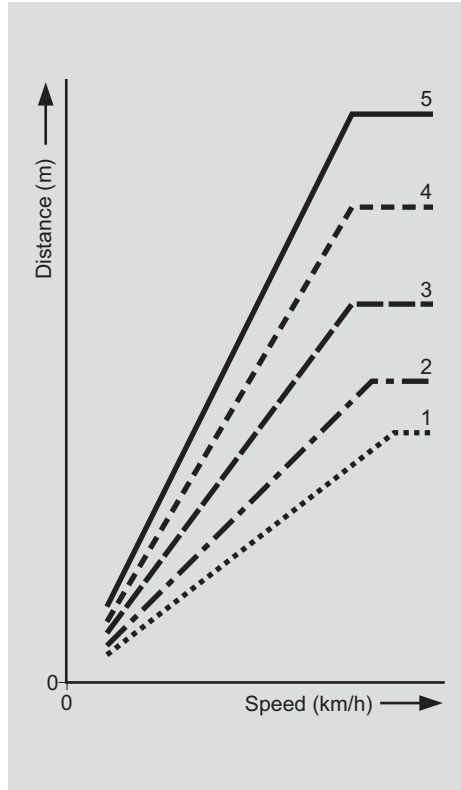
The distance to the vehicle driving ahead can be changed.



The 3-position spring return switch with fixed central position can be used to alter the distance:

- Press the switch up to decrease the distance to the vehicle ahead.
- Press the switch down to increase the distance to the vehicle ahead.

Five distances can be set in total. When ACC is switched on, the middle distance (3) is automatically set. The distance depends on the vehicle speed.

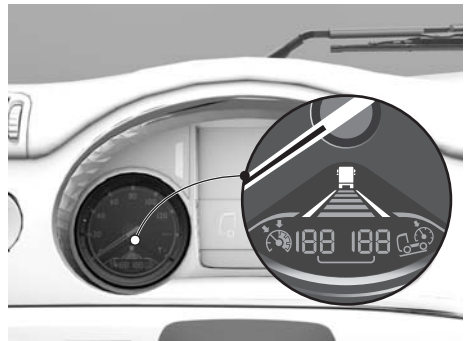


D001351

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## Distance indication on the instrument panel

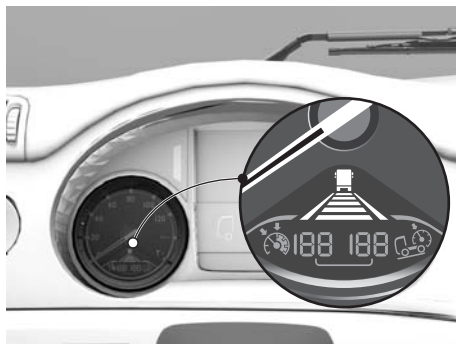
This distance indication on the instrument panel shows the smallest distance selection to the vehicle ahead.



D001847



This distance indication on the instrument panel shows the largest distance selection to the vehicle ahead.



D001848

### System capability warning

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If necessary, ACC adapts the vehicle speed towards the vehicle ahead automatically by using the vehicle brakes, so that a predefined following distance/time is ensured. The use of the vehicle brakes by ACC is limited to a certain level. If ACC is not able to make sure that a safe distance to the vehicle ahead is maintained, the warning **'Distance'** is activated on the master display. The driver must assist the vehicle braking by using the brake pedal.



D001723



**CAUTION: ACC does NOT brake the vehicle to a standstill.**

**If necessary, ACC brakes the vehicle to 25 km/h (16 mph), and below this speed the ACC is automatically switched off.**

## 8.1.5 ACC system warning

The '**ACC system malfunction**' warning is activated if:

- A general ACC system malfunction occurs.
- The vehicle air pressure drops below 6.5 bar with a vehicle speed that exceeds 15 km/h (9 mph).



D001727-2



The cruise control can still be engaged if ACC is no longer pre-selected by the ACC on/off switch on the control panel.

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## 8.2 FORWARD COLLISION WARNING

### 8.2.1 Forward Collision Warning (FCW)

Vehicles equipped with Adaptive Cruise Control (ACC) also have Forward Collision Warning (FCW).

FCW is engaged automatically when the vehicle speed exceeds 15 km/h (9 mph). Unlike the ACC, the FCW cannot be switched off.

FCW generates an acoustic signal (radio is muted) and a warning on the master display when the distance to the object ahead of the vehicle cannot be maintained by normal braking.



**WARNING!** When an FCW is issued the driver must immediately take over control of the vehicle.  
Depending on the situation by for example braking the vehicle using the vehicle's brakes.

There are two situations when an FCW is shown on the master display:

- **With ACC switched off.**  
When the distance to the vehicle ahead becomes too small or the traffic situation requires immediate braking by the driver using the vehicle's brakes.
- **With ACC switched on.**  
When, after the **System capability warning**, the distance to the vehicle ahead still becomes too small or the traffic situation requires immediate braking by the driver using the vehicle's brakes.



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*NOTE: The FCW function is not active when the vehicle speed is less than 15 km/h (9 mph).*



*NOTE: Even with ACC switched on an FCW might be activated unintentionally for a short time in some traffic situations. See section 'Traffic situations'.*

## 8.3 ADVANCED EMERGENCY BRAKING (AEBS)

### 8.3.1 Introduction



**WARNING!** Do not adapt your driving style to the knowledge of having the Advanced Emergency Braking System (AEBS).

**AEBS is merely a driving aid with certain limitations. AEBS cannot prevent accidents and it does NOT replace the driver's professional judgement of the actual traffic situation. It is the driver who is and remains at all times responsible for the proper operation of the truck.**



**WARNING!** AEBS cannot prevent a collision. There is a risk of an accident. The driver remains responsible. Always apply the brakes yourself and try to take evasive action.

Advanced Emergency Braking System (AEBS) is an addition to the Forward Collision Warning (FCW).

AEBS is preselected as on by default and disengaged and engaged using the AEBS switch. A warning indicator on the instrument panel indicates that AEBS is disengaged.



**NOTE:** Under certain circumstances a functional AEBS is not desirable and can be disengaged using the AEBS switch. Examples of such circumstances are;

- when the vehicle is towed,
- driving on a building site or
- in heavy city traffic.



**NOTE:** The Forward Collision Warning (FCW) cannot be switched off.

The ACC/AEBS sensor monitors the speed, the distance to and position of the objects in front of the vehicle.

See section 'AEBS/ACC sensor' in chapter 'Warnings and safety regulations'.

AEBS can help to minimise the risk of a collision with a vehicle in front or a stationary vehicle or object. As a result, the effects of an accident can be mitigated. AEBS can also recognise stationary objects and react to them, for example, by issuing a warning and braking.

If you fail to adapt your driving style or if you are inattentive, AEBS can neither reduce the risk of accident nor override the laws of physics. AEBS cannot take road and weather conditions into account, nor the prevailing traffic situation. AEBS is only an aid. You are responsible for keeping a safe distance to the vehicle in front, for the vehicle speed, braking on time and keeping the driving lane. You should always adapt your driving style to suit prevailing road and weather conditions.



**NOTE:** AEBS does not react to objects moving away from the vehicle (overtaking vehicles, for example). This is because the distance between them is increasing rather than decreasing.



**NOTE:** AEBS cannot always detect other road users (for example, motorcycles or low bed semi-trailers) and complex traffic situations (for example, curves, tunnels or busy city traffic).

### 8.3.2 Engaging and disengaging Advanced Emergency Braking System (AEBS)



**WARNING!**

- **Do not adapt your driving style to the knowledge of having the AEBS.**

**AEBS is merely an aid to assist the driver. AEBS does not release the driver from the obligation to be responsible at all times for the vehicle speed and distance to the vehicle ahead. Ignoring these matters can lead to very dangerous situations (such as a collision) for the driver but also for other road users.**



### **WARNING!**

- *The driver remains responsible for braking the vehicle under all circumstances.  
AEBS will not brake for people or animals or for oncoming traffic.  
AEBS may not bring the vehicle to a complete stop under all conditions. Ignoring these matters can lead to very dangerous situations (such as a collision) for the driver but also for other road users.*



### **WARNING!**

- *Do not use AEBS while driving in off-road situations.  
The cover of the AEBS/ACC sensor might get dirty causing AEBS to react incorrectly.  
In such case AEBS may:*
  - *Give an unnecessary warning and then brake the vehicle.*
  - *Neither give a warning nor intervene.*

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### **WARNING!**

- *The driver remains responsible for keeping a safe distance from the vehicle ahead in all situations.  
AEBS cannot always detect other road users (for example, motorcycles or low bed semi-trailers).  
In such cases AEBS may:*
  - *Give an unnecessary warning and then brake the vehicle.*
  - *Neither give a warning nor intervene.*

## Engaging AEBS

AEBS is preselected on as soon as the ignition of the vehicle is switched on.



AEBS is disengaged and engaged using the AEBS on/off switch on the control panel.



**NOTE:** *The Forward Collision Warning (FCW) cannot be disengaged.*



If AEBS is switched off, this warning indicator is lit on the instrument panel.

## Disengaging AEBS

## Disengaging conditions

When one of the following conditions is met, AEBS is disengaged:

- The AEBS on/off switch is operated.
- There is a malfunction in the AEBS.
- The vehicle speed drops below 15 km/h (9 mph) (ex-factory).
- ABS is deactivated by a malfunction.
- There is a malfunction in the vehicle brake system (EBS).



**CAUTION: AEBS must be switched off under the following circumstances:**

- *Driving with a trailer with no or no functional ABS.*
- *No functional brake lights on truck or (semi-) trailer. There is no feedback for following traffic.*



**NOTE: It is illegal to drive without functional brake lights.**

- *Driving off road.*



**NOTE: When you are finished driving off road, check the cover of the ACC/AEBS sensor for dirt or damage.**

- *On a high speed roller tester.*

## 8.3.3 Detection and intervention



**WARNING! AEBS does not react to:**

- *people or animals*
- *oncoming vehicles*

*As a result, AEBS might not warn you or intervene in these situations. There is a risk of an accident.*

*Always pay careful attention to the traffic situation and be ready to brake.*



**WARNING! AEBS cannot always recognise other road users and complex traffic conditions.**

**In such cases, AEBS may:**

- *give an unnecessary warning and then brake the vehicle*
- *neither give a warning nor intervene*

*There is a risk of an accident.*

*Continue to drive carefully and be prepared to brake, particularly if AEBS warns you.*

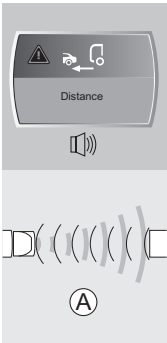
If AEBS detects the risk of a front-end collision, it issues an audible and visual warning. If the risk persists, AEBS automatically initiates partial braking of the vehicle. If you do not react to the warnings and partial brake application, AEBS automatically initiates an emergency brake application.

The Adaptive Cruise Control (ACC) may warn you (A) before AEBS if there is a risk of collision.  
See section 'System capability warning'.

The three steps in which AEBS can intervene are:

**Step 1**

An FCW is issued both as a warning on the master display and as an acoustic signal (B).



D002167-2

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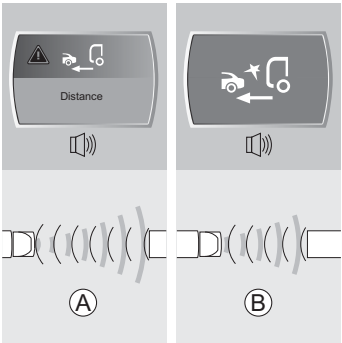
*NOTE: The FCW cannot be suppressed.*



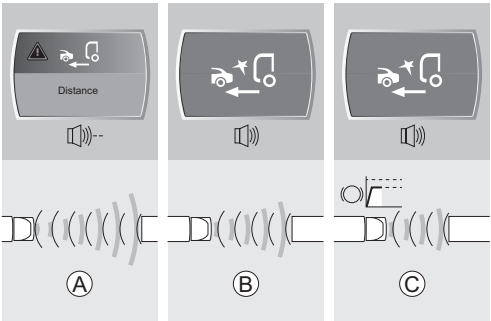
*NOTE: If an FCW is active, the audio device and/or hands-free system installed at the factory are automatically muted.*

**Step 2**

The FCW is combined with an autonomic partial braking of the vehicle (C).



D002171-2



D002178-2



**NOTE:** This partial braking can be suppressed by:

- operating the indicators left or right just before or during the FCW,
- switching on the hazard warning lights or
- switching AEBS off using the switch on the control panel.

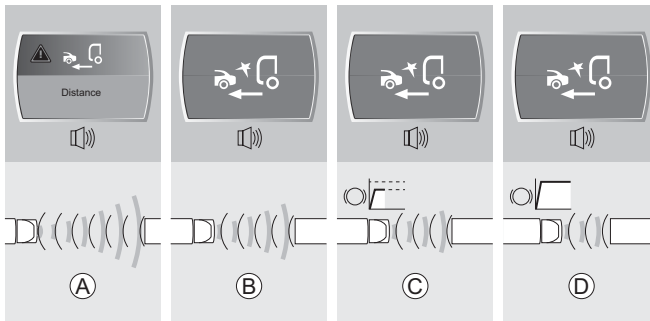


**NOTE:** This partial braking can be interrupted by the driver either by:

- operating the indicators left or right,
- depressing the throttle beyond the pressure point (kickdown) or
- switching AEBS off using the switch on the control panel.

### Step 3

FCW remains active and an emergency braking is performed trying to avoid or at least mitigate a collision (D).



D002164-2



**NOTE:** This emergency braking can be interrupted by the driver either by:

- Operating the indicators left or right,
- Depressing the throttle beyond the pressure point (kickdown) or
- switching AEBS off using the switch on the control panel.



**WARNING! AEBS cannot prevent a collision. There is a risk of an accident. Always apply the brakes yourself and try to make an evasive manoeuvre.**



**NOTE:** AEBS only 'reacts' to objects moving in the same direction and stationary objects.



**NOTE:** AEBS does not react to objects moving away from the vehicle (overtaking vehicles, for example). This is because the distance between them is increasing rather than decreasing.



**NOTE:** AEBS cannot always detect other road users (for example, motorcycles or low bed semi-trailers), vehicles driving on a different line and complex traffic situations (for example, curves, tunnels or busy city traffic).





*NOTE: AEBS does not automatically adapt to road and traffic conditions.*

## 8.4 LANE DEPARTURE WARNING SYSTEM (LDWS)

### 8.4.1 LDWS (Lane Departure Warning System)

The LDWS warns the driver when the vehicle unintentionally departs from its lane. The LDWS uses a camera behind the windscreen to detect road line markings. Markings like solid white or yellow lines, dashed white or yellow lines and raised dots ('Botts' dots). An acoustic signal (radio is muted) initiates in the left-hand or right-hand front speaker when the lane is departed.

The acoustic signal sounds like driving over a rumble strip, and is heard on the side on which the vehicle has departed from the lane.

## 8

### Engaging conditions

An audible warning initiates in the left-hand or right-hand front speaker when the following conditions are met:

- The ignition is switched on.
- The LDWS switch is not operated to disable.
- The vehicle speed is above 60 km/h (37 mph).
- The direction indicator is not applied or has not been applied during the last 30 seconds.
- The brake pedal is not applied.
- The vehicle leaves the lane.

### Engaging and disengaging LDWS

LDWS is engaged automatically when the ignition is switched on.  
Press the LDWS switch to disengage or engage the LDWS.



**NOTE:** The LDWS can only warn the driver when the lane markings are clearly recognisable. The function of the system is indicative only. It cannot guarantee that the correct lane has been chosen under all circumstances. Accurate and consistent functioning of LDWS requires clear visibility and recognition of the lane markings.

Unfavourable conditions or weather conditions can have a negative influence on the LDWS performance. For example:

- Snow and/or ice.
- Heavy rain or fog.
- Heavily soiled windscreen.
- Worn-out windscreen wipers.
- Multiple or poorly recognisable lane markings.
- Driving in narrow curves.
- Road partly covered with for example snow, sand or gravel.
- Reflections caused by standing water.
- Reflections caused by road repairs.
- Wheel tracks on wet roads.

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If this warning indicator is visible, LDWS cannot detect any lines or the LDWS switch was operated to disable or a malfunction is detected.

## 8.5 ANTI SLIP REGULATION (ASR)

### 8.5.1 Anti Slip Regulation (ASR)

ASR prevents the driven wheels from slipping when accelerating. ASR makes sure that the vehicle remains stable when driving off on critical road surfaces (especially accelerating when cornering). ASR is an addition to the EBS system.

When the driven wheels start to slip on one or both sides of the vehicle, ASR becomes active. One or both wheel(s) is/are braked and/or engine power is decreased. In this way, optimum traction is achieved.



If the ASR system intervenes, the warning indicator on the instrument panel starts flashing.

### Increased wheel slip



When the ASR switch is operated, increased wheel slip is permitted.

Below a speed of 45 km/h, the ASR control is adjusted so that more wheel slip is permitted. This function can be used when driving on loose surfaces (for example sand, gravel, snow). When the ASR switch is used to switch off the function, the ASR disabled warning indicator on the instrument panel is visible.

## 8.6 VEHICLE STABILITY CONTROL (VSC)

### 8.6.1 Vehicle Stability Control (VSC)

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The VSC system 'Vehicle Stability Control' helps the driver to stabilise the vehicle combination in critical driving situations. If a critical driving situation arises when making turns, for example when the vehicle slips or might turn over, VSC intervenes by reducing the engine torque and activating the brake system.



**NOTE:** A vehicle that is equipped with VSC may unexpectedly brake hard in certain situations.



When the VSC system intervenes, the VSC warning indicator starts flashing on the instrument panel.

When the VSC warning indicator remains on, the system has a fault. Have service performed by the nearest DAF Service dealer.



**WARNING!**

- **Do not adapt the driving style to the knowledge of having VSC control.**

**'Vehicle Stability Control' control does not release the driver from the obligation to adapt the driving style to the traffic and road surface conditions. It is not a guarantee against instability; it helps the driver in unexpected difficult situations, but physical limits remain. VSC control cannot offset the results of driving too close to the vehicle in front or taking a bend at too high a speed. Ignoring these matters can lead to very dangerous situations (like a collision or vehicle turn over) for the driver but also for other road users.**



## 9.1 GENERAL

To prevent rapid wear and burning of the clutch plate and clutch release assembly it is strongly recommended to use only the first gear when carrying out shunting operations and when driving off. This applies to both a laden and an unladen vehicle.

**Always depress the clutch fully when changing gear to prevent excessive wear of the synchromesh units.**

The gearboxes are synchromesh units. When changing gear, exert consistently steady pressure on the gear change lever until the gear has engaged.

For gear selection advice, see 'Driving style' in the chapter 'Driving'.



**CAUTION:** *Shifting down at a speed that is too high for the selected gear can damage the engine (overspeeding) and/or the gearbox.*

- *When shifting down, make sure that the speed is not too high for the selected gear.*

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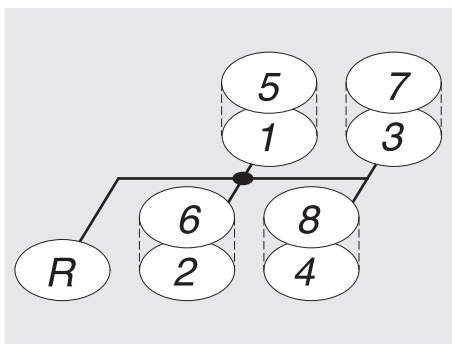


**CAUTION:** *Engaging a drive-off gear while the vehicle is moving can damage the gearbox and differential.*

- *Only engage the forward drive-off gear when the vehicle is fully stationary, the engine is at idle speed and the clutch is fully pressed.*
- *Only engage the reverse gear 3 seconds after the vehicle is fully stationary, the engine is at idle speed and the clutch is fully pressed.*
- *Drive-off is not allowed when the vehicle is still moving in the opposite direction.*

## 9.2 CHANGING GEAR WITH THE 8-SPEED GEARBOX

The main gearbox has four transmission ratios, which must be selected twice in two speed ranges. A low speed range (1<sup>st</sup> to 4<sup>th</sup> gear) and a high speed range (5<sup>th</sup> to 8<sup>th</sup> gear).



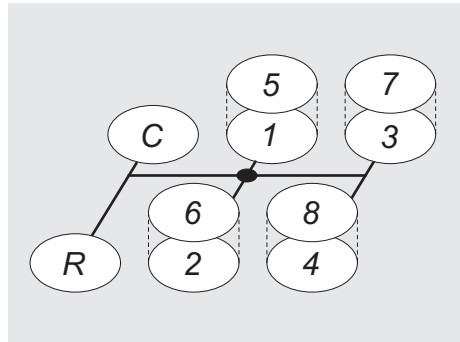
D001419

### 9.3 CHANGING GEAR WITH THE 9-SPEED GEARBOX

The main gearbox has a crawler gear (C) and consequently four gear ratios, which must be run through twice. A low speed range (1<sup>st</sup> to 4<sup>th</sup> gear) and a high speed range (5<sup>th</sup> to 8<sup>th</sup> gear).



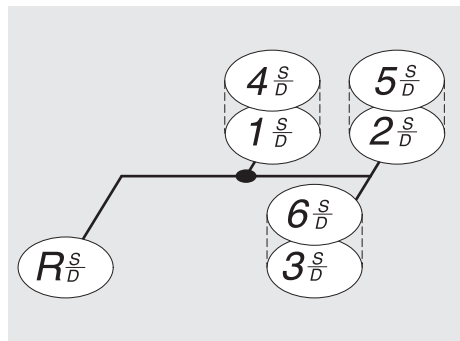
**NOTE:** *It is not possible to change to the high range when the crawler gear (C) has been selected.*



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### 9.4 CHANGING GEAR WITH THE 12-SPEED GEARBOX

The main gearbox has three gearbox ratios, which must be selected twice, in two speed ranges. A low speed range (1<sup>st</sup> to 3<sup>rd</sup> gear) and a high speed range (4<sup>th</sup> to 6<sup>th</sup> gear). The splitter box can split every speed, giving a total of twelve speeds (splitting).

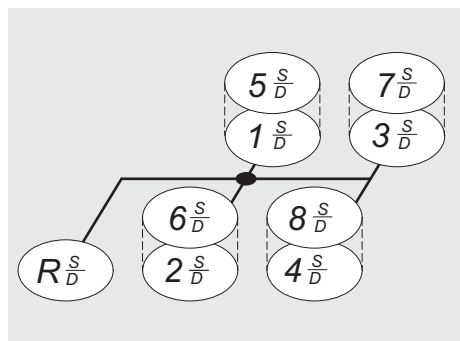


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### 9.5 CHANGING GEAR WITH THE 16-SPEED GEARBOX

The main gearbox has four gearbox ratios, which must be selected twice, in two speed ranges. A low speed range (1<sup>st</sup> to 4<sup>th</sup> gear) and a high speed range (5<sup>th</sup> to 8<sup>th</sup> gear). The splitter box can split every speed, giving a total of 16 speeds (splitting).



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## 9.6 CHANGING TO LOW OR HIGH SPEED RANGE

Changing to low or high speed range is done using a switch (B) on the front of the gear change lever: turn the switch down **for low speed range** and **up for high** range. Pre-selection is permitted. The actual gear changing takes place when the gear change lever passes the neutral position.



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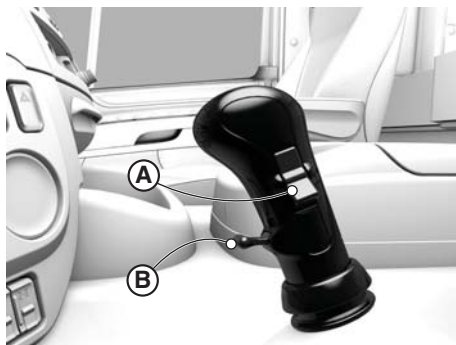
**CAUTION:** If the driver forgets to move the low-range switch (B) up when changing up to the high speed range, 1<sup>st</sup> or 2<sup>nd</sup> gear can be selected. This can seriously damage the clutch, gearbox and engine. A protection device (gate protection) has therefore been incorporated. If the vehicle speed is too high, the gear cannot be changed to 1<sup>st</sup> or 2<sup>nd</sup> gear using normal force. For safety's sake, it is still possible with a great effort.

- Do not shift unnecessarily to 1<sup>st</sup> or 2<sup>nd</sup> gear while the gate protection is active.

There is also a protection device for changing down from the high speed range to the low speed range. This device makes it impossible to change down incorrectly at high speeds to the low speed range. If the protection device is defective, it is only possible to change gears within the high speed range. Also see 'Gearbox low-range protection' in chapter 'Emergency repairs'.

## 9.7 CHANGING HALF GEARS (SPLITTING)

Changing **half gears**, or **splitting**, is done using the switch (A) on the side of the gear change lever. **Lower side** pressed: **low** transmission, **upper side** pressed: **high** transmission. When the switch has been operated, the clutch pedal must be **fully** depressed, after which the gear-change is made. Pre-selection is permitted.



D001819



The warning indicator on the instrument panel lights up when the **low splitter** position is engaged.

## 9.8 CHANGING GEAR ON AN INCLINE

Depending on the vehicle model, the following recommendations result in favourable economies when driving on gradients:

- Do not reduce speed more than is necessary at the beginning of a gradient.
- If necessary, accelerate to full throttle and shift down in good time.
- Shift down until the engine speed stays in the green area of the rev counter. Do not instantly shift down if the engine speed suddenly drops.
- Shift up as soon as the engine speed increases on the incline.
- Depending on the steepness of the incline, shift down at a lower engine speed or shift up at a higher engine speed.
- Only drive in the top semi-green area of the rev counter **momentarily** in case of pulling through in a gear for skipping more gears with a fully laden vehicle on a slope.
- Do not change gear if the vehicle 'holds its speed' in the green area of the rev counter.

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For more information see 'Driving style' in chapter 'Driving'.

## 9.9 CLUTCH PROTECTION

Driving off in too high a gear puts excessive stress on the clutch.

### Clutch protection system

Depending on the vehicle configuration, a clutch protection system can be present. The clutch protection system prevents the vehicle from driving off in gear positions other than 1, 2 and reverse (both split low and high). The exception is the twelve speed gearbox, where driving off in second gear is only allowed in split low.



If a higher gear is selected to drive off in, a yellow warning '**Drive-off gear too high**' is activated and the accelerator pedal is deactivated.







## 10.1 INTRODUCTION

## General

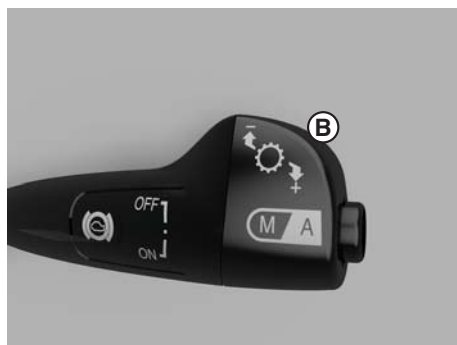
The AS Tronic gearbox is a fully automated gearbox based on a mechanical gearbox combined with an electropneumatic gear and clutch control system.

In contrast to conventional automatic gearboxes, the AS Tronic does not show any tendency to creep when a gear is engaged.

Although the accelerator pedal has a kick-down section (full throttle), the AS Tronic does not have an enforced gear-down shift function.



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- A Rotary knob with AS Tronic gearbox
- B Steering column switch with AS Tronic gearbox

In the fully automatic mode, clutch and gear controls are operated electronically. In the manual mode, the electronics check each intended gear change. If necessary, the selected gear is ignored to prevent overloading of the engine and the transmission.

The master display shows the driver all important system information, such as neutral position, current gear, manoeuvring mode, clutch overload and any faults in the system.

**WARNING!**

- *Never leave the vehicle when the engine is running and a gear is engaged.*
- *Always set the gearbox selector switch to N (neutral) before leaving the vehicle.*
- *Always apply the park brake before leaving the vehicle.*

*Leaving the vehicle with the engine running and a gear engaged can result in the vehicle moving off without a driver. This may lead to dangerous situations resulting in serious injury, and can damage the vehicle.*

If the door of the vehicle is opened and a gear is engaged:

- an acoustic signal is audible
- a warning is visible on the master display.



*NOTE: Gearbox shift behaviour of the AS Tronic gearbox is different when the engine has not reached operating temperature. This function is overruled when:*

- *High engine torque is needed.*
- *Operating temperature has been reached.*

## AS Tronic control mode version

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The AS Tronic gearbox is equipped with one control mode version:

- **AS Tronic Full control mode.**
- **AS Tronic Lite control mode.**

The AS Tronic Lite control mode has the same functionality as the AS Tronic Full control mode except it has limited manual shifting possibilities. Manual shifting is only possible when:

- the vehicle speed is below 30 km/h, or
- the engine brake is active (at any vehicle speed).

## Specific applications

The AS Tronic Full and Lite control mode are intended for the normal transport applications. For specific applications the following versions are available:

- Off-road application. This application is intended only for vehicles that frequently operate in heavy terrain conditions.  
For more information see the section 'Off-road mode'
- Liquid transport application. This application is intended for all types of tanker transport.  
For more information, see the section 'Liquid transport application'
- Heavy haulage application. This application is intended only for vehicles with very high Gross Combination Masses (GCM)

## 10.2 DRIVING OFF ON A FLAT ROAD

### Driving off forward

- Foot on brake.
- Rotary knob in position **D** (Drive; automatic or manual forward drive)
- The gear that has been engaged appears in the master display.
- Release the park brake.
- Release the foot brake and accelerate. When driving off, only accelerate as much as is required.
- Do not change the accelerator pedal position while changing gears.



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### Load detection

Every time the engine is started, the AS Tronic system selects the second or third gear, depending on the vehicle configuration, as a drive-off gear.

After load detection it is also possible to select a higher gear as drive-off gear, if the vehicle load is below certain limits.

The result of the load detection process depends on the vehicle load and engine load. The load detection process can take some time to finish. Every time the vehicle is at standstill for a longer period or when the ignition is switched off, load detection is reset.



**NOTE:** It may be necessary to select a lower gear as the drive-off gear when the load on the vehicle is increased in a short time and the ignition has not been switched off.

### Driving off in reverse



D001821

- Foot on brake.
- Rotary knob in position **R** (Reverse).

The gearbox selects the low reverse gear **RL** as the drive-off gear. If required, move the steering column switch towards **+** to shift the gearbox to the high reverse gear **RH**.

- The gear that has been engaged appears in the master display.
- Release the park brake.
- Release the foot brake and accelerate. When driving off, only accelerate as much as is required.



**WARNING!** *If the accelerator pedal is not operated, the vehicle may start to roll. If rolling is unwanted, this may lead to dangerous situations resulting in serious injury and damage to the vehicle.*

- *If rolling is unwanted, apply the service brake if the accelerator pedal is not operated.*



**CAUTION:** *When the vehicle is at standstill and a gear is engaged, pressing the accelerator and brake pedal at the same time leads to damage to the clutch assembly.*

- *Never press the accelerator and brake pedal at the same time.*

## Rolling vehicle in neutral position

Rolling vehicle in **N**:

- Turn the rotary knob to position **D**.
- The vehicle selects a gear for pulling away and pulls off.



**WARNING!** *If the vehicle rolls back, forward gear cannot be selected. If the vehicle rolls forward, reverse gear cannot be selected. This can lead to dangerous situations resulting in serious injury or damage to the vehicle if driving off is required.*

- *Stop the vehicle immediately with the service brake. Then select a gear and drive off.*



**WARNING!** *If the vehicle rolls and a gear is not engaged (selector switch in **N**), the drive train is interrupted and engine braking is not possible. This may lead to dangerous situations resulting in serious injury or damage to the vehicle.*

- *If prolonged braking is necessary, select a gear (selector switch in **D**) or use the retarder, if present on the vehicle.*



**CAUTION:** *If the vehicle rolls off in the opposite direction to that of the engaged gear, the clutch and/or the differential may be overloaded or damaged when the accelerator is pressed.*

- *Never press the accelerator when the vehicle rolls off in the opposite direction to that of the engaged gear.*



**CAUTION:** *The clutch is continuously slipping when driving in the manoeuvring mode. Driving on a level road in this mode may lead to clutch overload or damage.*

- *Only use the manoeuvring mode for actual manoeuvring.*
- *Never use the manoeuvring mode for normal driving on a level road, on a gradient or when driving over heavy terrain.*
- *The exception to this is driving on snowy roads when all traction increasing aids (such as increasing the wheel slip with ASR switch, lifting trailing axle etc.) have been applied and the driven wheels still have no traction, in which case the manoeuvring mode can be used on flat roads only. Try to make a path by rocking the vehicle backwards and forwards. To do this, select the forward and reverse manoeuvring mode alternately while giving a little throttle. Keep the vehicle in motion by using the moving weight of the vehicle. Only use the manoeuvring mode in this way for a few moments to avoid overloading the clutch.*

### 10.3 AUTOMATIC GEAR CONTROL

The automated gearbox always starts in fully automatic mode.

The AS Tronic calculates the shifting times for any situation, taking into account the current driving conditions.

If another gear is desired while driving, use the steering column switch to temporarily (seven seconds) shift up (+) or down (-) within a zone defined by the AS Tronic gearbox.

The automatic function remains active; the 'A' remains on the display.

When these seven seconds have elapsed, shifting is again governed by the AS Tronic gearbox.



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**NOTE:** *On the **AS Tronic Lite control mode**, manual shifting is only possible when the vehicle speed is below 30 km/h or when the engine brake is active (at any vehicle speed).*



**CAUTION:** The vehicle speed may increase when travelling downhill. In fully automatic mode, the AS Tronic gearbox selects a higher gear to protect the engine against excessive engine speed. If the gearbox is in manual mode, the engine speed can exceed the maximum permitted engine speed. This can lead to serious damage to the engine.

- If the gearbox is in manual mode, select a higher gear manually to prevent the engine from exceeding the maximum engine speed (red area of the rev counter)

## 10.4 MANUAL GEAR CONTROL

Manual gear control remains possible using steering column switch (B):

- shift up.  
Shift up one gear: move steering column switch (B) 1 x to +.  
Shift up two gears: move steering column switch (B) 2 x to +.
- shift down.  
Shift down one gear: move steering column switch (B) 1 x to -.  
Shift down two gears: move steering column switch (B) 2 x to -.



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**NOTE:** On the **AS Tronic Lite control mode**, manual shifting is only possible when the vehicle speed is below 30 km/h or when the engine brake is active (at any vehicle speed).



**WARNING!** If the vehicle rolls and a gear is not engaged (selector switch in N), the drive train is interrupted and engine braking is not possible. This may lead to dangerous situations resulting in serious injury or damage to the vehicle.

- If prolonged braking is necessary select a gear (selector switch in D) and engage the engine brake or use the retarder if present on the vehicle.



**NOTE:** When the steering column switch has been operated, the gearbox is in the manual control mode. Indication in the master display: **M** (Manual) or **A** (Automatic). If the gearbox is in the automatic control mode, it is possible to overrule this mode for seven seconds. For example, when approaching a gradient, it is possible to shift down manually while the gearbox remains in the automatic mode.



Revert to automatic:

- push button on steering column lever switch.



D001822

In particular situations, for instance, when braking before a turn, it is difficult to judge in manual mode which gear should be engaged:

- By pressing button (M/A), the automatic function selects the proper gear and activates it.
- By pressing button (M/A) again, the automatic function is deactivated.



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## 10.5 MANOEUVRING

Forward manoeuvring mode



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## Reverse manoeuvring mode

In the manoeuvring mode (for example, when coupling or uncoupling trailers) the vehicle speed and pulling force are very easy to control with the accelerator pedal. When the accelerator is released, the vehicle stops.

When driving in manoeuvring mode, there is continuous slip in the clutch. Therefore, only use the manoeuvring mode for actual manoeuvring.

The lowest gear is always selected for the manoeuvring mode, both forward and reverse, and the maximum engine speed, with the accelerator pedal down, is 1050-1100 rpm.

The manoeuvring mode is not a crawl gear.



D001824



**WARNING!** *If the accelerator pedal is not operated, the vehicle may start to roll. If rolling is unwanted, this may lead to dangerous situations resulting in serious injury and damage to the vehicle.*

- *If rolling is unwanted, apply the service brake if the accelerator pedal is not operated.*



**CAUTION:** *The clutch is continuously slipping when driving in the manoeuvring mode. Driving on a level road in this mode may lead to clutch overload or damage.*

- *Only use the manoeuvring mode for actual manoeuvring.*
- *Never use the manoeuvring mode for normal driving on a level road, on a gradient or when driving over heavy terrain.*
- *The exception to this is driving on snowy roads when all traction increasing aids (such as increasing the wheel slip with ASR switch, lifting trailing axle etc.) have been applied and the driven wheels still have no traction, in which case the manoeuvring mode can be used on flat roads only. Try to make a path by rocking the vehicle backwards and forwards. To do this, select the forward and reverse manoeuvring mode alternately while giving a little throttle. Keep the vehicle in motion by using the moving weight of the vehicle. Only use the manoeuvring mode in this way for a few moments to avoid overloading the clutch.*



**CAUTION:** *When the vehicle is at standstill and a gear is engaged, pressing the accelerator and brake pedal at the same time leads to damage to the clutch assembly.*

- *Never press the accelerator and brake pedal at the same time.*

## 10.6 DRIVING ON A GRADIENT

### Driving off on a gradient



#### **WARNING!**

- *If the vehicle rolls, stop the vehicle immediately using the brake pedal. Then select a gear and drive off.*

*If the vehicle rolls back, forward gear cannot be selected. If the vehicle rolls forward, reverse gear cannot be selected. This can lead to dangerous situations resulting in serious injury or damage to the vehicle if driving off is required.*



#### **CAUTION:**

- *Never press the accelerator when the vehicle rolls off in the opposite direction to that of the engaged gear.*

*If the vehicle rolls off in the opposite direction to that of the engaged gear, depressing the accelerator pedal may overload the clutch.*

Driving off on a gradient can be done using:

- The park brake, or
- Hill Start Aid.

**Driving off on a gradient is best done using Hill Start Aid.**

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### Before driving off

- Park brake is applied.
- Brake pedal is depressed.
- Rotary knob in position 'D' (or 'R').  
When driving off on a gradient in too high a gear, AS Tronic does not change down automatically. If necessary, select a lower gear manually.



**NOTE:** By default, the gearbox selects the low reverse gear **RL** as the default drive-off gear for reverse driving. If necessary, move the steering column switch towards '+' to shift the gearbox to the high reverse gear **RH**.



D001820

### Driving off using the park brake

- Release the brake pedal.

- Accelerate (fully).
- Release the park brake when the vehicle is ready to drive off.

**WARNING!**

- *If rolling is unwanted, depress the brake pedal if the accelerator pedal is not operated.*

*If the accelerator pedal is not depressed, the vehicle may start to roll. If rolling is unwanted, this may lead to dangerous situations resulting in serious injury and damage to the vehicle.*

**Driving off using Hill Start Aid**

Driving off on a hill is best done using Hill Start Aid. See section 'Hill Start Aid' in the chapter 'Driving'.

**Driving on a gradient**

If a gear change on a gradient is not preferred, choose the manual gear control mode (for more information, see section 'Manual gear control').

Changing down is only possible by either manually selecting a lower gear or releasing the accelerator pedal and directly operating it again. The gearbox shifts down to a lower gear.



**NOTE:** *If the cruise control is active at higher vehicle speeds, it is possible that during travelling on a slight downhill slope the AS Tronic gearbox might shift to neutral. This is called the coasting function and is done to save fuel. The gear is automatically engaged again.*

**WARNING!**

- *If prolonged braking is necessary, select a gear (selector switch in D) or use the retarder, if present on the vehicle.*

*If the vehicle rolls and the rotary knob is in position 'N', the drive line is interrupted and engine braking is not possible. This may lead to dangerous situations resulting in serious injury or damage to the vehicle.*



**CAUTION:** *The vehicle speed may increase when travelling downhill. In fully automatic mode, the AS Tronic gearbox selects a higher gear to protect the engine against excessive engine speed. If the gearbox is in manual mode, the engine speed can exceed the maximum permitted engine speed. This can lead to serious damage to the engine.*

- *If the gearbox is in manual mode, select a higher gear manually to prevent the engine from exceeding the maximum engine speed (red area of the rev counter).*



## CAUTION:

- *Only use the manoeuvring mode for actual manoeuvring.*
- *Never use the manoeuvring mode for normal driving on a level road, on a gradient or when driving over heavy terrain.*
- *The manoeuvring mode can be used only when driving on snowy roads when all traction increasing aids (for example increasing the wheel slip with the ASR switch, lifting the trailing axle) have been applied and the driven wheels still have no traction. Try to make a path by rocking the vehicle backwards and forwards. To do this select the alternating forward and reverse manoeuvring mode while giving a little throttle. Keep the vehicle in motion by using the moving weight of the vehicle. Only use the manoeuvring mode in this way for a few moments to avoid overloading the clutch.*

*The clutch slips continuously when driving in the manoeuvring mode. Driving on a level road in this mode may lead to clutch overload or damage.*

## 10.7 OFF-ROAD MODE

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If a vehicle is equipped with the off-road application, a second shifting program can be selected.

This shifting program is tuned especially for driving off-road (heavy conditions), and can be selected with a switch on the dashboard.

This means that besides the standard on-road shifting program, an off-road shifting program can be selected.

### Driving in the off-road mode

The off-road mode is **only** available when the AS Tronic gearbox rotary knob is in position **D** (Drive) or **R** (Reverse).

When the off-road mode is selected, the behaviour of the gearbox changes.

The off-road mode provides almost uninterrupted tractive power on the driven wheels, to keep the vehicle in motion under heavy conditions. The off-road shift strategy features a very progressive clutch operation, ultrafast gear shift and good transient behaviour of the engine.

The main difference between the off-road mode and the standard on-road mode is:

- More progressive clutch behaviour:
  - to cope with the high rolling resistance, and keep the vehicle moving, and
  - to prevent the engine from stalling by fast clutch opening when the accelerator pedal is released
- Faster up- and downshifting.

**NOTE:**

- **Do not** use the manual mode when driving in the off-road mode. In manual mode, large downshift steps cannot be made quickly.
- The off-road mode is not available in the manoeuvring mode.
- The increased wheel slip function (ASR control) is activated on selection of the AS Tronic off-road mode. The ASR control is adjusted below speeds of 45 km/h so that more wheel slip is permitted. In this way, more traction is obtained when driving off in heavy terrain.

## Driving off in heavy conditions

When driving off in heavy conditions (high rolling resistance) it is important to let the wheels do the work. The correct way to do this is to **depress the accelerator pedal quickly to the full throttle position**. The off-road software recognises this situation and closes the clutch accordingly.



**CAUTION:** Failure to depress the accelerator pedal quickly to the full throttle position when driving off in heavy conditions can result in rapid and heavy clutch wear.

- **Always depress the accelerator pedal quickly to the full throttle position when driving off in heavy conditions.**

## Engaging and disengaging the off-road mode



Press this switch to engage or disengage the AS Tronic off-road mode.

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## 10.8 LIQUID TRANSPORT APPLICATION

If a vehicle is equipped with the liquid transport application, special software is programmed in the electronics of the AS Tronic gearbox. This software application is intended for all types of tanker transport, but in particular for tanks without partitions or driving with partly filled tanks.

This modified software takes into account the backward and forward movement of loads, resulting in modified gear shift timing and gear selection.

### Drive-off gear

The modified gear shift strategy also sets the third gear as the default driving-off gear. Driving off in third gear makes sure that the vehicle starts moving more smoothly than in a lower gear. This results in less movement of the liquid.



**NOTE:** It is advisable to use Hill Start Aid when driving with backward and forward moving loads, for example oscillating liquid in a tank. For more information, see section 'Hill Start Aid' in chapter 'Driving'.

## 10.9 CLUTCH PROTECTION



When the clutch is overloaded, a yellow warning '**Clutch overload**' appears in the master display.

Relieve the clutch by:

- increasing the vehicle speed (drive train is closed) by further pressing in the accelerator pedal.
- stopping the vehicle by releasing the accelerator pedal.
- manually selecting a lower gear.



**NOTE:** On the **AS Tronic Lite control mode**, shifting using the steering column switch is only possible when the vehicle speed is below 30 km/h or when the engine brake is active (at any vehicle speed).



**CAUTION:** If the driver ignores the warning message, the clutch is closed when the accelerator pedal is operated. This prevents further clutch overloading. This may cause the engine to stall and, as a result, the vehicle may start to roll if on a slope. When the accelerator pedal is released, the clutch opens again. When the clutch is overloaded in manoeuvring mode, it engages quickly to prevent a further overload; however, this causes the vehicle to drive away roughly. This can lead to dangerous situations.

- Do not ignore the warning message and relieve the clutch.





## 11.1 GENERAL

Vehicles with air suspension are equipped with an electronically controlled air suspension (ECAS).

On vehicles equipped with air suspension, a remote control unit is used to operate the vehicle height.

The remote control unit is located against the console of the driver's seat. This control unit can only be operated when the ignition is switched on and the vehicle speed is lower than 9 km/h.

The chassis height parameters are stored in the electronics of the air suspension. If the actual chassis height is not in conformity with the set parameters, the chassis adjusts itself. .

The remote control can be used to set the chassis to the most suitable height for:

- coupling or uncoupling a trailer
- loading or unloading the vehicle.



### **WARNING!**

- *Driving a vehicle that is not at normal driving height, other than for coupling and uncoupling a semi-trailer, is not permitted.*

*Driving a vehicle that is not at normal driving height, other than for coupling and uncoupling a semi-trailer, can result in unstable vehicle behaviour. This can lead to dangerous situations and serious injury and damage to the vehicle. Also the legally permitted driving height can be exceeded.*



### **WARNING!**

- *Always set the chassis in the lowest position during tipping and unloading heavy loads like containers.*

*Unloading heavy loads from a vehicle with the air suspension not in the lowest position can result in an unstable vehicle during unloading. This can lead to dangerous situations and serious injury and damage to the vehicle.*

## 11.2 REMOTE CONTROL



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D001707



front of truck selected



rear of truck selected



automatic setting of normal driving height



lifting or lowering truck trailing axle

front of trailer selected



rear of trailer selected



lifting or lowering trailer trailing axle



## M1

lifting of chassis to pre-set height

## M2

as M1, but for a different chassis height

11



lifting of selected chassis ends when the key is released



lowering of selected chassis ends when the key is released

## Stop

all adjustments are stopped.

## 11.3 ENGAGING AIR SUSPENSION

- Press the 'Vehicle rear' key; the relevant indicator light on the remote control comes on.
- If the front axle is also equipped with air suspension, press the key for 'Vehicle front' or 'Vehicle rear'; the relevant indicator light lights up. It is also possible to select both the front **and** rear ends of the vehicle. In this case, both indicator lights come on.
- If the vehicle has air suspension as well, press the key for the relevant axle.

The choice can be cancelled by pressing the same key once again. If the air suspension continues adjusting during loading or unloading, press the 'stop' button. The vehicle stops readjusting.



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## 11.4 STOP KEY

When the 'Stop' key on the remote control unit is pressed, the system responds as follows, irrespective of the vehicle speed:

- When the chassis height changes, the electropneumatic valves are cut-out immediately. The height at that moment is now the desired height.
- If the 'Stop' key is pressed while switching off the ignition, the delay setting is activated. When this setting is activated, the height adjustment remains active for 60 minutes when the ignition is switched off or until the air supply has become insufficient.

Unless stated otherwise, the keys need only be pressed once briefly.

## 11.5 SETTING MEMORY KEYS (M KEYS)

- Bring the chassis to the desired height using the keys 'Lower chassis' and 'Lift chassis'.

- Press the **'Stop'** key and keep it depressed.
- Press either of the **M** keys briefly. The momentary chassis height is programmed in the ECAS unit.

If this M key is pressed again, the vehicle adjusts itself to this programmed chassis height.

A different chassis height can be programmed with the other M key in the same way.

## 11.6 AXLE LOAD MONITORING

### General

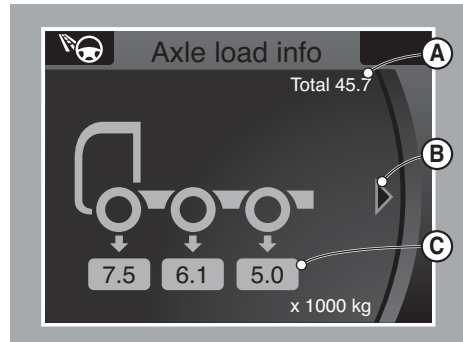
The Axle Load Monitoring system is used to show the actual axle loads. Using the MCS, the individual axle loads and the load's weight can be activated and shown on the master display.

The axle load is only shown when the ignition is switched on and the vehicle is stationary and at normal driving height.

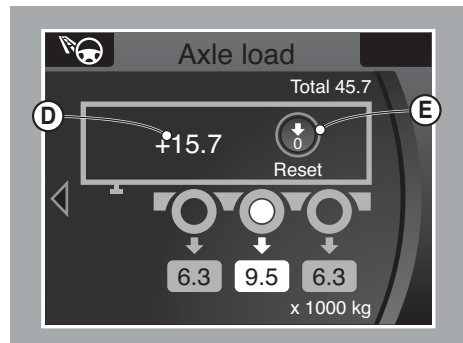
The Axle Load Monitoring menu in the master display contains:

- Gross combination weight (A).
- More than one display in case of a combination (B).
- Axle load (C).
- Payload reference (D).
- Reset payload function (E).

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D001736

## Axle load

### Tractor

In the menu 'Driving support', select 'Axle load' to display the axle loads. The displayed axle load (C) is the overall weight on the axle (load + vehicle's own weight). The displayed axle load (C) on a vehicle with a leaf-sprung front axle is a calculated value. When a small arrow (B) is shown to the left or right side of the display, the Menu Control Switch can be used to retrieve more information.



**NOTE:** The axle loads are only shown when the vehicle is at standstill.

### Semi-trailers

Select the small arrow (B) using the MCS to open the screen with semi-trailer information.

To display the axle load on a semi-trailer, the following conditions must be met:

- The semi-trailer must have an EBS brake system, or
- The semi-trailer must have an air suspension version that supports Axle Load Monitoring.

On semi-trailers with Axle Load Monitoring, all individual axle loads are shown.

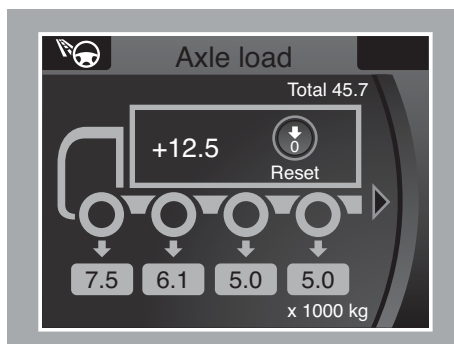
On semi-trailers without Axle Load Monitoring but with EBS, only the overall axle load of all axles is shown in the display.

On semi-trailers with neither EBS nor Axle Load Monitoring, only the axle load of the truck is shown.



**NOTE:** A highlight on the axle and its load value show the selected axle or indicates the axle's overload. See 'Axle overload warning'.

### Rigid



D001737

When the 'Axle load' function is selected in the menu, a number of axle loads (C) are shown, depending on the vehicle configuration. The value (D) that is displayed in the vehicle indicates the vehicle load.

It depends on the type of the vehicle whether the axle load values are shown. For instance, the axle load on a leaf-sprung front axle is not shown. On a full air-suspended truck, all axle loads are always shown.

When a small arrow (B) is shown to the right side of the display, the Menu Control Switch can be used to retrieve information on the trailer.



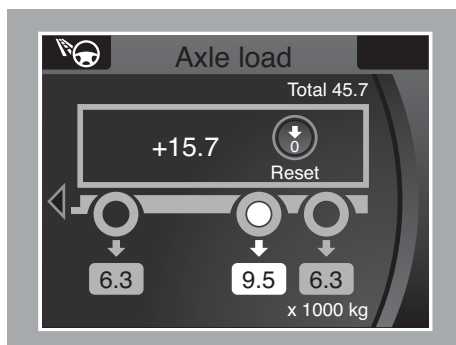
*NOTE: The axle loads are only shown when the vehicle is at standstill.*

### Trailers

Select the small arrow (B) using the MCS to open the screen with the information on the trailer.

To display the axle load on a trailer, the following conditions must be met:

- The trailer must have an EBS brake system, or
- The trailer must have an air suspension version that supports Axle Load Monitoring.



D001738

On trailers with Axle Load Monitoring, all individual axle loads are shown.

On trailers without Axle Load Monitoring but with EBS, only the overall axle load of all axles is shown in the display.

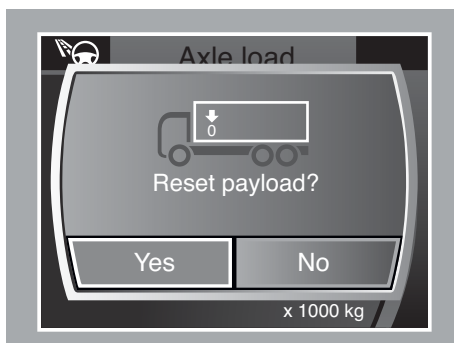
On trailers with neither EBS nor Axle Load Monitoring, only the axle load of the truck is shown.

When a small arrow (B) is shown to the left side of the display, the Menu Control Switch can be used to retrieve information on the truck.

### Reset payload

When the 'Reset' function is selected, the actual axle load (C) is used as a reference. This information also remains available when the ignition is switched off. Disconnecting the electrical connection between truck and semi-trailer deactivates the 'Gross combination weight' function.

In this way it can be determined how much weight has been added or removed. If 'Yes' is selected in the pop-up screen that follows the selection of the 'Rest' function, the load weight (D) is set to 0.0. When the vehicle is loaded or unloaded after resetting, the indicated load increases or decreases.



D001739

## Axle overload warning

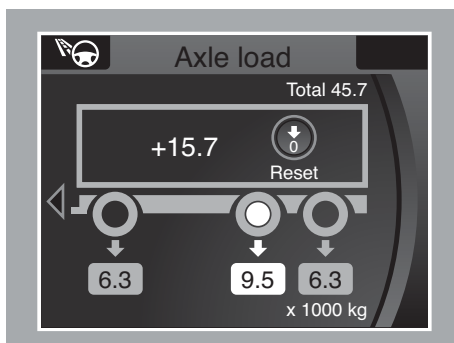
To inform the driver when the maximum load for an axle is exceeded, a pop-up warning screen with the text 'Axle overload' is shown on the master display.

- On the 'Axle load' information screen, the overloaded axle is highlighted.
- A popup indication of the axle load is activated as a reminder for the driver that one of the axles is overloaded.



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This warning can be suppressed with the Menu Control Switch. Each time the warning is suppressed with the Menu Control Switch, the value of the maximum load is increased by 500 kg.



Avoid getting unnecessary fines by having the value for the maximum axle load set somewhat below the legal maximum axle load. The DAF Service dealer can change the value of the maximum axle load.



*NOTE: The overload indication on the 'Axle load' information screen can only be activated when the vehicle is at standstill.*



*NOTE: The axle load can also be monitored using the master display (Driving support - Axle Load Monitoring). Follow the instructions in the master display.*

## 11.7 AXLE LOAD CALIBRATION

If the vehicle is equipped with Axle Load Monitoring, perform an axle load calibration regularly. Do this when the vehicle is first taken into service. The axle load values are set to a higher value ex-factory. Repeat calibration at least once a year. Calibration is also necessary when the unsprung mass of the vehicle is changed (for example, mounting aluminium wheels).

Correct calibration of the axle loads requires a weighbridge on which the individual axle loads are measured. If the actual value measured deviates from the display reading, it can be corrected using the remote control. Best results are obtained when the vehicle is calibrated twice, once empty and once fully laden.



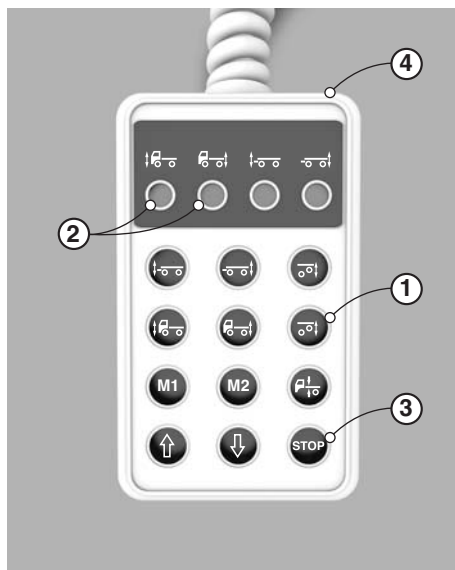
*NOTE: Only the truck can be calibrated. Calibration of the trailer or semi-trailer must be performed on the trailer system.*

### Calibration using the remote control

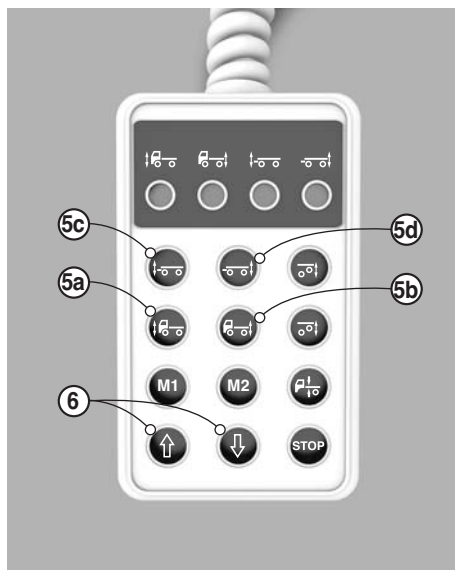
Switch on the ignition and activate the driving height.

Use the Menu Control Switch to open the 'Axle load' screen on the master display.

- To enter the calibration mode, press the truck lift trailing axle button (1) once.
- The indicator lights of the truck (2) start blinking.
- Press the 'STOP' button (3) and hold it down for at least five seconds.
- The four green LEDs (4) will go on one after another to indicate that the calibration mode is active.



D001708

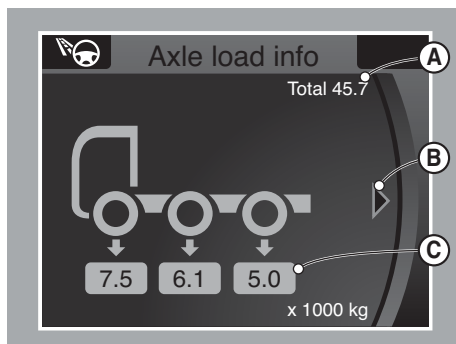


D001709

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- Select the axle (5) for calibration; a maximum of four axles per truck can be calibrated.  
Axles must be calibrated from the front to the rear.
  - The 1<sup>st</sup> axle is 5a (symbol for lifting/lowering the front axle of the truck).
  - The 2<sup>nd</sup> axle is 5b (symbol for lifting/lowering the driven axle of the truck).

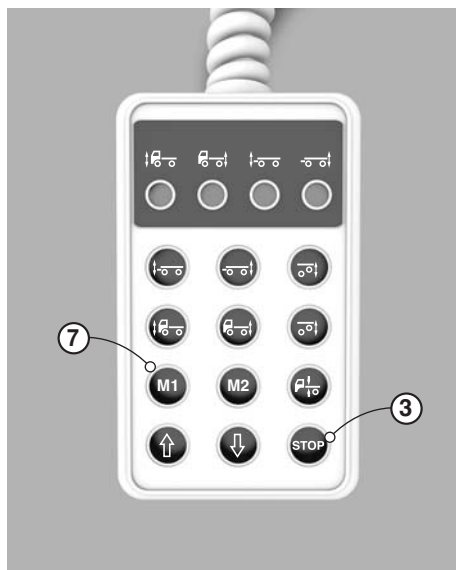
- The 3<sup>rd</sup> axle is 5c (symbol for lifting/lowering the front axle of the trailer).
- The 4<sup>th</sup> axle is 5d (symbol for lifting/lowering the rear axle of the trailer).
- Use the arrow keys (6) to increase or decrease the value (C) on the master display.



D001735

- To store the values, press the 'STOP' (3) and 'M1' (7) keys simultaneously.
- Then select the next axle (5) that needs calibrating.
- To stop calibrating, hold down the 'STOP' button (3) for at least five seconds.

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D001710



**NOTE:** During calibration, the remote control is automatically switched off if it is not operated for 20 seconds and the calibration mode is ended.



## 12.1 TILTING THE CABIN



### **WARNING!**

- Only tilt the cabin when the engine has stopped.

*Several parts of the engine move when the engine is running. Coming into contact with these moving parts can result in serious injury.*



### **WARNING!**

- Have a DAF Service dealer check the tilting mechanism after a collision.

*If the vehicle has been involved in a collision, under no circumstances must the cabin be tilted without due precautions. The internal mechanism of the lift cylinder may have been damaged to such an extent that the cylinder is no longer locked by the internal stop collar. There is a risk that the cabin could be in the unlocked tilt position. In that case, there is a danger of the cabin no longer being held back and falling forward to the ground. This can lead to dangerous situations and serious injury.*



### **WARNING!**

- Make sure that there is no one in the cabin.
- Make sure that there is no one immediately in front of the cabin.

*If there are people in or immediately in front of the cabin, the cabin must under no circumstances be tilted. This can lead to serious injury.*

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### **WARNING!**

- Always tilt the cabin fully forward when working under the cabin.

*Working under a cabin that is not fully tilted is very dangerous. There is a risk that the cabin could fall back, trapping the person working underneath it. This can lead to dangerous situations and serious injury.*



### **CAUTION:**

- Make sure that there is sufficient clearance around the cabin before tilting it.

*A tilted cabin needs sufficient space in front of and above the vehicle. Tilting a cabin in a place without sufficient space may damage the cabin and nearby objects.*



### **CAUTION:**

- Make sure that there are no loose objects in the cabin.

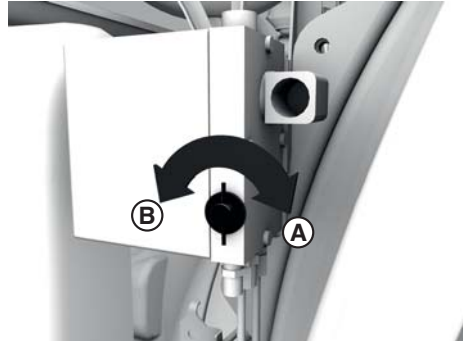
*If there are any loose objects in the cabin, the cabin must not be tilted under any circumstances. This can lead to damage to the cabin and the object concerned.*

**If a cooler box or refrigerator has been fitted, switch it off or unplug it before tilting the cabin (depending on the type). The cooler box or refrigerator must remain switched off or unplugged for at least 30 minutes after the cabin has been tilted back.**

The cabin is tilted hydraulically using a hand priming pump. The pump is located behind the cabin.

The pump has a tap which can be moved to two positions:

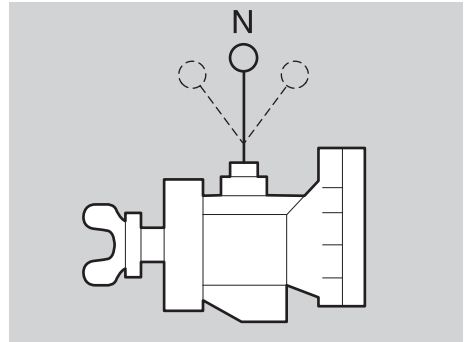
- A Tilting the cabin forward
- B Tilting the cabin back to its original position. This is also the position used during driving.



D001654

## Tilting the cabin forward

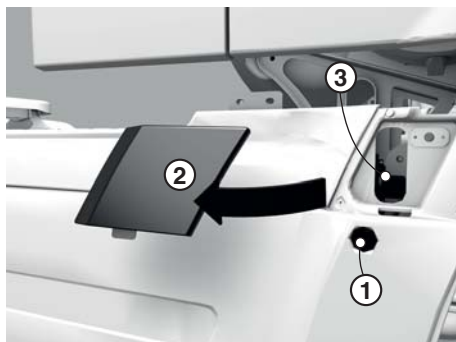
1. When the vehicle is equipped with a manually shifted gearbox, move the gear change lever to the neutral position.



D000717-2

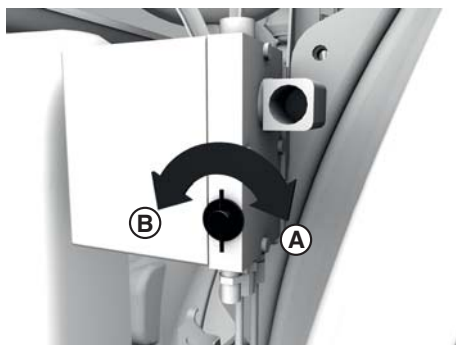
2. Apply the park brake. Also see section 'Stopping procedure' in the chapter 'Driving'.
3. Stop the engine.
4. Remove all loose objects from the cabin to prevent damage.
5. Close the doors.
6. Put wheel chocks in front of and behind the wheels of the driven axle.

7. If the vehicle is equipped with side skirts, the tap can be reached through opening (1). The pump mechanism (3) can be operated after removing the cover (2). Press in the cover (2) at the front and back to remove it from the side-skirt.



D001655

8. Turn the tap fully to the right, against the spring pressure, until locked in position A. Use the jack rod.



D001654

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9. Operate the pump so that the cabin tilts forward. The cabin locking mechanism automatically releases. As soon as the cabin passes its natural point of balance, the force of gravity gradually tilts the cabin further forward without additional pumping.



**NOTE: The tilting of the cabin can be stopped at any time by turning the tap to position B.**

## Tilting back

1. When the vehicle is equipped with a manually shifted gearbox, move the gear change lever to the neutral position.
2. Turn the tap to position B.
3. Tilt the cabin back by operating the pump with the jack rod. When the cabin has passed the centre of gravity it falls back in the catch. When the catch engages, the cabin is automatically locked.
4. Leave the tap in position B.
5. If the truck is equipped with a manually shifted gearbox, go in the cabin and move the gear change lever firmly to fourth gear to secure the shifting mechanism.

## Checking the cabin locking



When the cabin is not fully at its normal driving position (locked), the 'Cabin lock open' warning is visible on the master display.

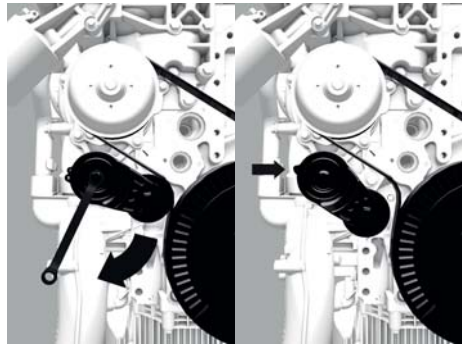
## 12.2 REPLACING THE POLY-V-BELT

### Important

Always fit the same type of poly-V-belt as the one being replaced.

### Removal and installation of the poly-V-belt on the MX-13 engine

1. Disconnect the earth cable from the battery.
2. Remove the front engine encapsulation.
3. Loosen the connector of the electric fan clutch, if fitted, and remove the wiring from the bracket.



D001632

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4. Place a 17-mm ring spanner on the hexagon of the belt tensioner.



**NOTE:** The tensioner can be temporarily blocked with a 4- to 5-mm thick pin (bore); see the arrow in the illustration.

This facilitates removal and installation of the poly-V-belt.

5. Slacken the poly-V-belt so that it can be removed from the pulleys.
6. Allow the automatic belt tensioner to spring carefully back to the stop, if it has not been temporarily blocked.
7. Remove the poly-V-belt through the opening at the guide ring. Hang the poly-V-belt over a fan blade. Rotate the fan and hang the poly-V-belt over it. Repeat this for the entire fan and then remove the poly-V-belt.
8. Inspect the pulleys for damage, rust and grease deposits.
9. Pull the new poly-V-belt over the fan.



D001633



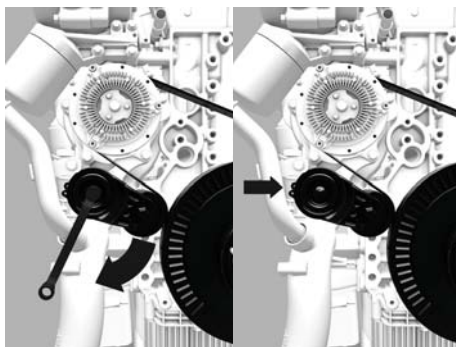
10. Fit the poly-V-belt over as many pulleys as possible.
11. Tension the automatic belt tensioner (if it has not been temporarily blocked) using a 17 mm ring spanner and place the poly-V-belt over the last pulleys. Allow the automatic belt tensioner to spring carefully back against the new poly-V-belt.
12. If applicable, remove the locking pin.  
The locking pin can be removed by moving the tensioning roller against the spring tension.
13. Check that the poly-V-belt falls into all grooves of all the belt pulleys.
14. If applicable, fit the electric fan clutch connector and connect the wiring, making sure that it is clear of moving parts.
15. Fit the front engine encapsulation.
16. Connect the earth cable to the battery.



D001636

## Removal and installation of the poly-V-belt on the MX-11 engine

1. Disconnect the earth cable from the battery.
2. Remove the front engine encapsulation.
3. Loosen the connector of the electric fan clutch, if fitted, and remove the wiring from the bracket.



D001851

4. Place a 17-mm ring spanner on the hexagon of the belt tensioner.

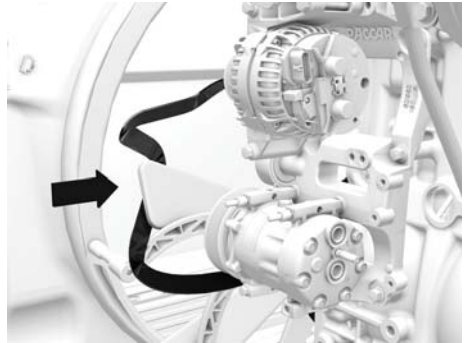


**NOTE:** The tensioner can be temporarily blocked with a 4- to 5-mm thick pin (bore); see the arrow in the illustration.

This facilitates removal and installation of the poly-V-belt.

5. Slacken the poly-V-belt so that it can be removed from the pulleys.
6. Allow the automatic belt tensioner to spring carefully back to the stop, if it has not been temporarily blocked.

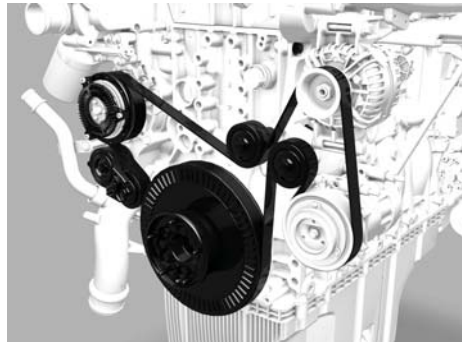
7. Remove the poly-V-belt through the opening at the guide ring. Hang the poly-V-belt over a fan blade. Rotate the fan and hang the poly-V-belt over it. Repeat this for the entire fan and then remove the poly-V-belt.
8. Inspect the pulleys for damage, rust and grease deposits.
9. Pull the new poly-V-belt over the fan.



D001853

10. Fit the poly-V-belt over as many pulleys as possible.
11. Tension the automatic belt tensioner (if it has not been temporarily blocked) using a 17 mm ring spanner and place the poly-V-belt over the last pulleys. Allow the automatic belt tensioner to spring carefully back against the new poly-V-belt.
12. If applicable, remove the locking pin.

The locking pin can be removed by moving the tensioning roller against the spring tension.



D001855

13. Check that the poly-V-belt falls into all grooves of all the belt pulleys.
14. If applicable, fit the electric fan clutch connector and connect the wiring, making sure that it is clear of moving parts.
15. Fit the front engine encapsulation.
16. Connect the earth cable to the battery.

12

## 12.3 REPLACING THE FUEL FILTER



**WARNING!** Diesel is a toxic fluid. Physical contact can lead to serious health problems.

- Avoid direct contact.
- If there is skin contact: remove the substance with paper or a cloth, wash with soap and water. If the irritation persists, consult a doctor.
- If there is contact with the eyes: rinse with plenty of water for at least 15 minutes and consult a doctor.
- If swallowed: do NOT induce vomiting. Rinse the mouth, drink plenty of water and consult a doctor.
- If inhaled, get some fresh air, rest and consult a doctor.



**WARNING! Fuel is highly flammable and can cause fire or an explosion resulting in serious injury.**

- Collect the fuel that escapes.
- Avoid sparks and open flames in the vicinity of fuel.



**CAUTION: Dirt in the fuel system can lead to significant damage to the fuel system.**

- Work cleanly when working on the fuel system.
- Clean the vicinity of the fuel system components before starting any activities on them.

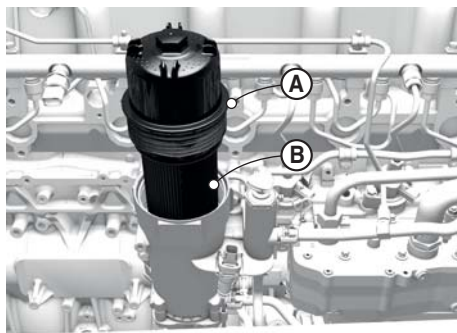
### Replacing the fuel filter on the MX-13 engine

1. Open the tank cap to let the overpressure escape from the tank.
2. Loosen the filter cover (A) a few turns until air is audibly drawn in through the filter housing.



**NOTE:** Use a hexagonal ring spanner to loosen the filter cover.

3. Wait 1 to 2 minutes before removing the filter cover, allowing the filter housing to drain.



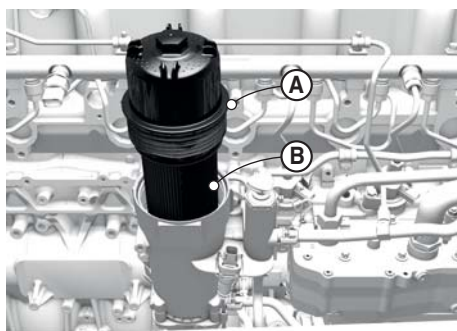
D001637-2

4. Remove the cover (A) together with the fuel filter cartridge from the filter housing.



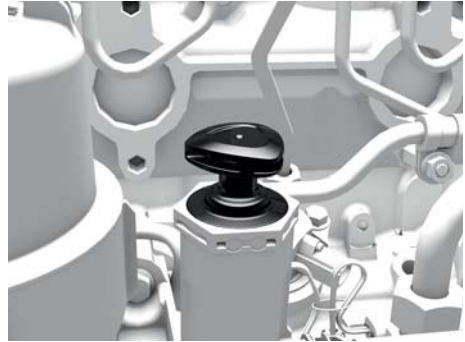
**NOTE:** The fuel filter cartridge is a disposable filter, and must not be cleaned and reused. Dispose of the filter as chemical waste.

5. Before installing the new filter cartridge, check the inside of the filter housing and the filter cover for dirt particles. If the inside of the filter housing is clogged, it must be cleaned.
6. Replace the O-ring of the filter cover (A).
7. Fit the fuel filter cartridge (B) in the filter cover.
8. Fit the filter cover with the fuel filter cartridge and tighten it to the specified torque as indicated on the top of the filter cover (A).



D001637-2

9. Pump for approximately 2 minutes using the hand pump to partially fill the filter housing with fuel.



D001638

10. Start the engine and run it at idling speed for a few minutes. In this way, any air in the filter housing can escape.
11. If the engine will not start up or runs very erratically, follow the procedure 'Starting after fuel tank has run dry'.
12. Check the fuel system for leaks.

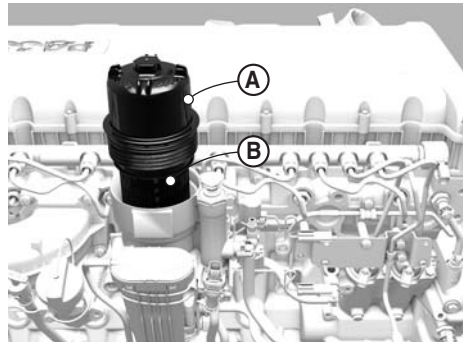
## Replacing the fuel filter on the MX-11 engine

1. Open the tank cap to let the overpressure escape from the tank.
2. Loosen the filter cover (A) a few turns until air is audibly drawn in through the filter housing.



*NOTE: Use a hexagonal ring spanner to loosen the filter cover.*

3. Wait 1 to 2 minutes before removing the filter cover, allowing the filter housing to drain.



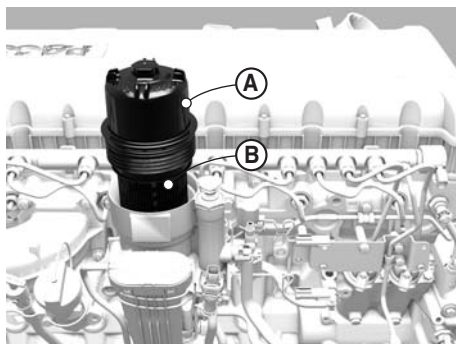
D001857

4. Remove the cover (A) together with the fuel filter cartridge from the filter housing.

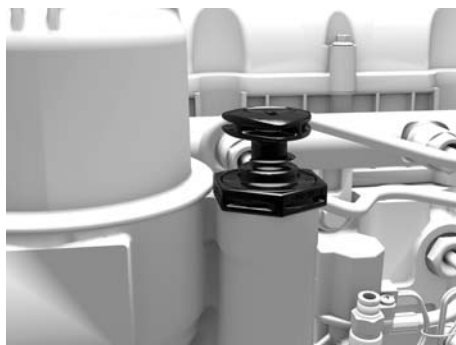


*NOTE: The fuel filter cartridge is a disposable filter, and must not be cleaned and reused. Dispose of the filter as chemical waste.*

5. Before installing the new filter cartridge, check the inside of the filter housing and the filter cover for dirt particles. If the inside of the filter housing is clogged, it must be cleaned.
6. Replace the O-ring of the filter cover (A).
7. Fit the fuel filter cartridge (B) in the filter cover.
8. Fit the filter cover with the fuel filter cartridge and tighten it to the specified torque as indicated on the top of the filter cover (A).
9. Pump for approximately 2 minutes using the hand pump to partially fill the filter housing with fuel.



D001857



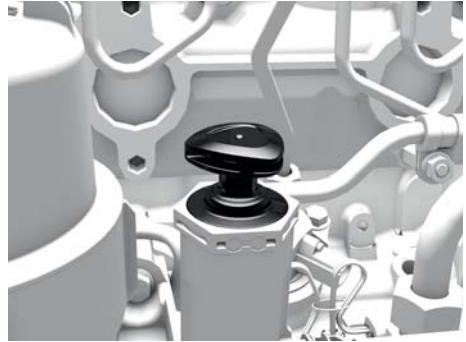
D001859

10. Start the engine and run it at idling speed for a few minutes. In this way, any air in the filter housing can escape.
11. If the engine will not start up or runs very erratically, follow the procedure 'Starting after fuel tank has run dry'.
12. Check the fuel system for leaks.

## 12.4 STARTING AFTER FUEL TANK HAS RUN DRY

Avoid running the fuel tank dry at all times. These starting instructions are for emergency situations only. The engine will only fire after several lengthy starting attempts. Failure to follow the starting instructions may damage the starter motor.

1. Operate the starter motor for 20 seconds until the engine runs. When the engine does not run after the 20 seconds starting time, use the hand pump until resistance is felt.
2. Start the engine again for 20 seconds. If the engine does not run within this time, allow the starter motor to cool down for at least 5 minutes before repeating the starting procedure.
3. Once the engine runs, it does not run smoothly for a short period of time. Do not operate the accelerator pedal for about two minutes.



D001638



*NOTE: The fuel injection pipes must not be disconnected.*

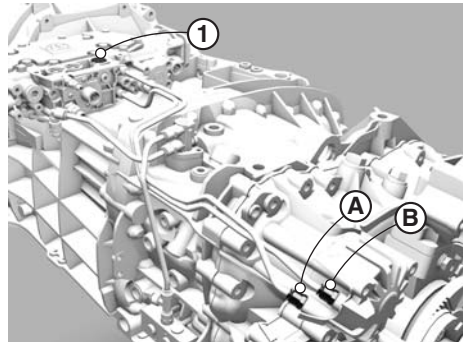
## 12.5 GEARBOX LOW-RANGE PROTECTION

### ZF gearbox

Interchange the air line connections (A and B) when the low range can no longer be used as a result of a failure. Only the lowest four gears are now available.

The integrated low-range protection valve (1) is located on the top of the gearbox.

**Have a DAF Service dealer correct the problem as soon as possible.**



D001640-2

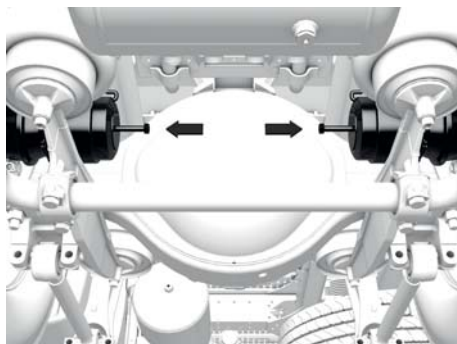
## 12.6 RELEASING THE PARK BRAKE



### **WARNING!**

- **Never release the park brake on an incline without precautionary measures.**

**Releasing the park brake on an incline causes the vehicle to move unintentionally. This can lead to serious injury and damage to the vehicle.**



D001641

1. Place wheel chocks in front of and behind the wheels.

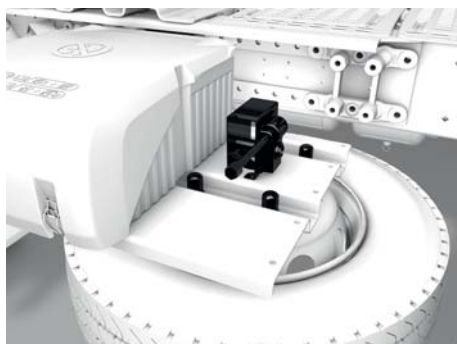


**NOTE:** It is **not** permitted to use a socket wrench to loosen the releasing bolt.

2. Turn the releasing bolt anti-clockwise as far as the stop using a ring spanner.
3. Carry out this operation for each spring brake cylinder.
4. Bring the park brake back in operating order by turning the releasing bolts clockwise as far as possible and tightening them to a torque of 45 Nm (75 Nm for the releasing bolt with control pin). The pressure in the spring brake cylinder circuit must be at least 6.5 bar.

## 12

## 12.7 SPARE WHEEL WINCH



D001642

### **Self-braking wheel winch**

1. Remove the wheel nut covers.
2. Unscrew the spare wheel nuts.
3. Lower the spare wheel.





**NOTE:** Always fit the wheel on the spare wheel bracket with the valve facing outwards.

## 12.8 JACKING UP THE LEAF-SPRUNG FRONT AXLE

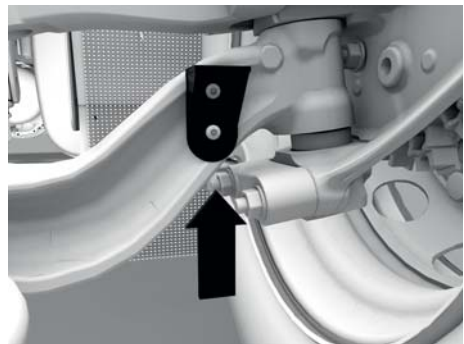


**WARNING!** Not using the indicated jacking points of the vehicle and supporting the vehicle when jacking up can lead to the vehicle falling off the jack, resulting in the vehicle getting jammed or damaged. This can lead to dangerous situations and serious injury.

- Always place the vehicle on a firm and level surface.
- Before jacking always secure the vehicle to prevent it from rolling away by applying the parking brake and/or using wheel chocks. Never release the parking brake while the vehicle is jacked up.
- Always position the jack on a firm and level surface. If the surface is not firm place the jack on a support plate.
- Position the jack under the spring attachment of the front axle when the leaf-sprung front axle must be jacked up. If this is not possible, place the jack under the spring as close as possible to the axle. To prevent damage of the leaf spring, the jack must under no circumstances be directly in contact with the leaf spring. Therefore ALWAYS use a protective plate between the jack and the leaf spring.
- Always use stands to support the chassis when carrying out repairs or service under a vehicle which rests on a jack.
- Do not carry out any work underneath a vehicle that is only supported by a jack or lifting gear.

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## 12.9 JACKING UP THE AIR SPRUNG FRONT AXLE



D001505-2





**WARNING!** Use the indicated jacking points of the vehicle and support the vehicle when jacking up. Otherwise the vehicle could fall off the jack, resulting in the vehicle getting jammed or damaged. This can lead to dangerous situations and serious injury.

- Always place the vehicle on a firm and level surface.
- Before jacking always secure the vehicle to prevent it from rolling away by applying the park brake and/or using wheel chocks. Never release the park brake while the vehicle is jacked up.
- Always position the jack on a firm and level surface. If the surface is not firm, place the jack on a support plate.
- When jacking up an air sprung front axle, position the jack only under the special fixing bracket.
- Do not perform any work underneath a vehicle when the vehicle rests on a jack or lifting device.
- Always use stands to support the chassis when working under a vehicle resting on a jack or lifting device.

### 12.10 JACKING UP THE REAR AXLE



**WARNING!** Not using the indicated jacking points of the vehicle and supporting the vehicle when jacking up can lead to the vehicle falling off the jack, resulting in getting jammed or damage to the vehicle. This can lead to dangerous situations and serious injury.

- Always place the vehicle on a firm and level surface.
- Before jacking always secure the vehicle to prevent it from rolling away by applying the parking brake and/or using wheel chocks. Never release the parking brake while the vehicle is jacked up.
- Always position the jack on a firm and level surface. If the surface is not firm place the jack on a support plate.
- Position the jack only under the spring attachment when the rear axle must be jacked up.
- To prevent deformation of the axle housing, the jack must under no circumstances be located directly under the axle housing or the differential casing.
- Always use stands to support the chassis when carrying out repairs or service under a vehicle which rests on a jack.
- Do not carry out any work underneath a vehicle that is only supported by a jack or lifting gear.

## 12.11 CHANGING WHEELS



**WARNING!** *Tension can be present in a cracked or damaged rim that holds an inflated tyre. The tyre or rim may crack or burst when the wheel is changed. This can lead to dangerous situations and serious injury.*

– **Always deflate the tyre and remove the tyre valve if a wheel with a cracked or damaged rim is removed.**

- Only use the original DAF rims specified for the vehicle concerned.
- Make sure that tyres of the same type and size are fitted on both sides of the axle.
- Always observe the tyre load capacity and speed index required.
- Insufficient cleaning of the mating surfaces and/or uneven tightening of the wheel nuts may cause vibrations during driving or braking.



**NOTE:** *If a wheel stud is replaced, check the other wheel studs on the relevant wheel hub, and if necessary, replace the other wheel studs. Check the wheel nut of the replaced wheel stud. If in doubt, replace the wheel nut.*

### Removing wheels

1. Chock the wheels to prevent the vehicle moving off.
2. Clean the screw thread of the wheel studs with a wire brush.
3. Oil the wheel studs sparingly.
4. Loosen the wheel nuts a few turns.
5. Fit a jack under the jacking point at the wheel to be replaced.
6. Jack up the vehicle and place a support under the axle.
7. Remove the wheel nuts and take the wheel off the hub.

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### Installing wheels

1. Clean the fitting edge of the wheel hub by scraping off dirt and corrosion with a scraper.
2. Apply a **thin** layer of grease to the fitting edge of the wheel hub.



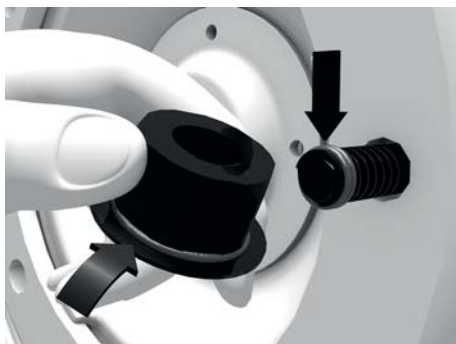
D001643

3. Also apply a **thin** layer of grease to the fitting edge of the rim. This grease layer must prevent the rim and the wheel hub from becoming 'rust-bound'.
4. Check whether the contact surfaces of the rim and the drum brake are clean. Clean them if necessary.



D001644

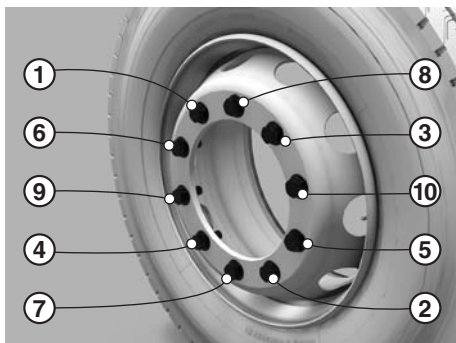
5. Clean the wheel nuts and then apply a drop of oil between the thrust washer and the nut.
6. Also apply a drop of oil to the first turn of the wheel stud screw threads.



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7. Fit the wheel nuts and tighten them evenly according to the sequence in the illustration.  
See chapter 'Technical data' for the specified tightening torque.
8. Check the tyre pressure.
9. **Re-torque the wheel nuts after 100 km.**  
**If new wheel studs are fitted, the nuts need additional re-torquing after 500 km.**



D001646-2



**NOTE:** After replacing a wheel, have the wheel nuts torqued to the correct tightening torque with a torque wrench.  
Always tighten and retighten wheel nuts in cold conditions. However, avoid tightening wheel nuts in extreme cold.

**WARNING!**

- *Re-torque the wheel nuts after 100 km, after a wheel change or if the wheel nuts have been loosened.*
- *If new wheel studs are fitted, the nuts need additional re-torquing after 500 km.*

*A wheel that rolls off a vehicle can lead to dangerous situations resulting in serious injury and damage to the vehicle.*

## Tyre diameters

**WARNING!**

- *Always use a tyre of the same size and load capacity as the removed tyre.*  
*If the tyre size is correct, check the tyre pressure of the spare or replacement tyre.*
- *If the ABS warning remains active after a short drive, follow the instructions mentioned in the section 'System warnings' of the chapter 'Master display'.*

*If the difference in tyre diameter is too large, the EBS brake system generates a warning symbol on the master display. The ABS function and VSC disengage automatically. Ignoring this warning may lead to a longer braking distance, unstable brake behaviour and unstable vehicle behaviour during critical driving situations. This can lead to very dangerous situations.*



**NOTE:** Depending on the tyre types on the vehicle, an EBS warning may already be shown on the master display with a worn tyre that is under-inflated by 2 bar. So first check the tyre pressure when a warning is displayed after a tyre has been replaced.

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## 12.12 TYRE INFLATING CONNECTION

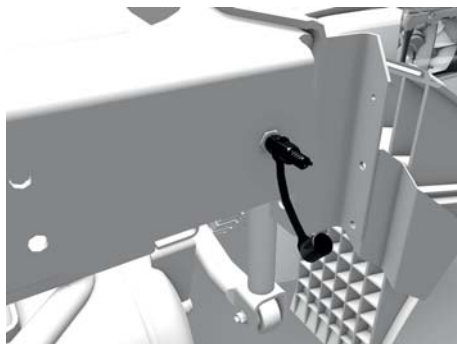
The tyre inflating connections are located:

- 1 On the left-hand side of the vehicle behind the front wheel mudguard.



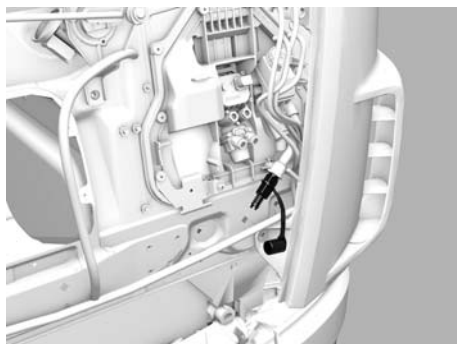
D001647

- 2 On the cross member at the rear of the vehicle.



D001648

- 3 On the left-hand side of the cabin behind the front panel.



D001825

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Make sure that the supply pressure on the pressure gauges is not at maximum, but at about 8 to 9 bar.

Inflate tyres with the engine running.

See chapter 'Technical data and identification' for the correct tyre pressures.

Refit the rubber cap of the tyre inflating connection after the tyre has been inflated.



*NOTE: The tyre inflating connections can also be used as an external inflating connection to fill the air pressure system with air from outside. When doing this, check that the system pressure is correct using the air pressure gauge.*

### 12.13 TOWING

It is possible to install a towing eye behind the grille.

Always use a towing bar when towing. Deviation from this rule is only allowed in emergencies.

When towing, error messages may be shown on the master display when the ignition is switched on.



**NOTE:** The maximum permissible vehicle speed, weight and distance vary by country.



**WARNING!**

- Do not tow the vehicle when fully loaded or with a trailer attached.

*Towing a fully loaded vehicle or a vehicle with trailer attached can result in unstable vehicle behaviour during critical driving situations applying to the towing and/or towed vehicle. This can lead to very dangerous situations. High forces and tensions in the chassis and drive line of the vehicles can also lead to damage to the vehicles.*

## Towing another vehicle

The maximum permitted technical weight of a vehicle towed with the towing provision (including load) is 40 tons.

## Being towed by another vehicle



**WARNING!**

- Towing may not take place at an angle of more than 20° relative to the vehicle centre line.

*The towed vehicle may be located asymmetrically (left or right) behind the tractor. Towing at an angle of more than 20° relative to the vehicle centre line can result in unstable vehicle behaviour. This can lead to very dangerous situations. High forces and tensions in the chassis and drive line of the vehicles can also lead to damage to the vehicles.*



**WARNING!**

- **Short-distance towing:** Release the park brake, see section 'Releasing the park brake', and adapt the driving style of the towing combination.
- **Long-distance towing:** Use a recovery vehicle.

*If the engine is not running during towing, there is no power steering and no air is supplied to the brake system. This results in difficult steering and increased brake pedal force, and ultimately leads to automatic engagement of the park brake. This can lead to dangerous situations.*

- Turn the ignition key so that the steering wheel is released (unless the vehicle is in a hoist).
- If there is insufficient pressure in the air reservoirs, release the park brake. See section 'Releasing the park brake'.
- To prevent damage to the gearbox, always **disconnect the prop shaft** from the differential.

**CAUTION:**

- **Always disconnect the prop shaft when towing.**

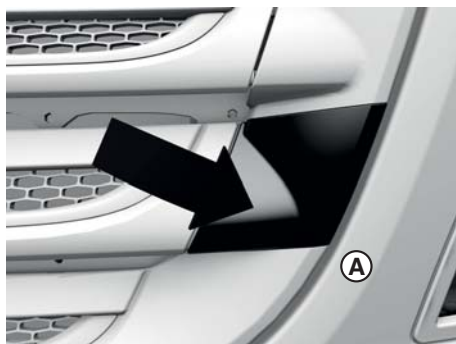
***If the prop shaft remains connected during towing, the gearbox may be seriously damaged.***

If the differential is damaged:

- Hoist the vehicle at the rear and **lock the steering wheel in the straight-ahead position.**
- In vehicles **without oil-lubricated rear hubs**, the axle shaft can be removed on both sides.

## Installing the towing eye

Remove the front plate cover plate at the left-hand or right-hand side by pulling it forward (A).



D001506-3

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1. Remove the rubber cover.
2. Screw in the towing eye fully so the entire thread is used.
3. Then turn the towing eye anti-clockwise (maximum 90 degrees) so the towing bar can be attached to the towing eye.

The maximum **GVW** the towing eye may pull is **40 tons**.



D001507-2

## Long-distance towing

If the vehicle must be towed over a longer distance, use a recovery vehicle that lifts the vehicle to be towed under its front axle. Do not run the engine because of the risk of engine lubrication failure.

## Tow starting

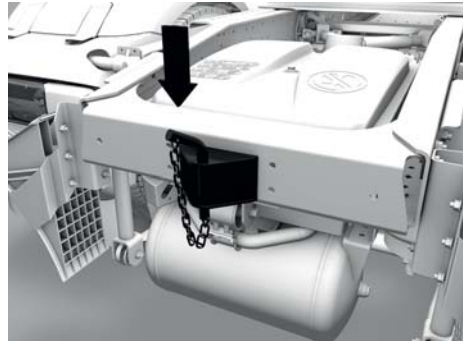
If the vehicle must be towed to start the engine, turn the ignition key clockwise to position D (M) of the ignition switch (ignition on).



**NOTE:** Vehicles with an AS Tronic gearbox **cannot** be towed to start the engine.

## Towing hook

Tractors may be fitted with a small towing hook at the rear end of the chassis. Use this towing hook only for light shunting work (maximum 10 tons).



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## 12.14 JUMP-STARTING



**CAUTION:** Starting the vehicle using a starting aid with too high a voltage can damage the electrical components.

- Never jump-start the engine with a fast charger.
- Never jump-start the vehicle with a voltage higher than 28 V.



**CAUTION:**

- Do not disconnect the battery cables while the engine is running.

**Disconnecting the battery cables while the engine is running can damage the electrical components.**

## Battery systems

The vehicle is equipped with a regular battery system with a set of two 12 Volt batteries.

The engine may be started with the aid of starter cables that use power from:

- separate auxiliary batteries (approximately 24 V), or
- another vehicle with a running engine (approximately 28 V).

**When this starting procedure is followed, the battery cables must not be disconnected.**

The battery box can be placed in two positions: beside the chassis or at the rear of the chassis.



### Battery box beside the chassis

Remove the battery box cover.

Connect the starter cables to the positive pole (+) first and then to the negative pole (-). To disconnect, release the negative pole (-) first and then the positive pole (+).

When the batteries are **fully** discharged and the engine is running, it is important that the starter cables are **not immediately** disconnected. The engine must run for at least 2 to 3 minutes before the starter cables are disconnected to prevent damage to the electrical system (peak voltage!).

Proceed as follows as soon as the engine starts running:

- Switch on as many power consumers as possible (for example: headlights, fog lamps, heater fan and so on).
- Remove the starter cables after the engine has run for 2 to 3 minutes.
- Switch off the consumers.

### Battery box at the rear of the chassis

Terminals where the starter cables can be connected are found on the lower side of the battery box.

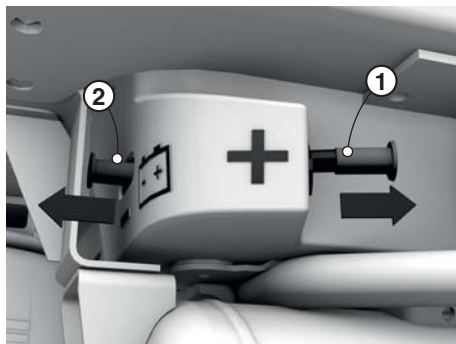
Remove the cover (1) and connect the starter cable to the positive pole (+) first. Then remove the cover (2) of the negative pole (-) and connect the starter cable.

To disconnect, release the negative pole (-) first, then the positive pole (+) and install the covers.

When the batteries are **fully** discharged and the engine is running, it is important that the starter cables are **not immediately** disconnected. The engine must run for at least 2 to 3 minutes before the starter cables are disconnected to prevent damage to the electrical system (peak voltage!).

Proceed as follows as soon as the engine starts running:

- Switch on as many power consumers as possible (for example: headlights, fog lights, heater fan and so on).
- Remove the starter cables after the engine has run for 2 to 3 minutes.
- Switch off the consumers.



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## 12.15 CHARGING BATTERIES

### Battery system

The vehicle is equipped with a set of two 12 Volt batteries.

**WARNING!**

- Always charge batteries in a properly ventilated area.
- Avoid sparks and open flames in the vicinity of batteries.

*Sparks and open flames in the vicinity of a battery can lead to an explosion which can cause serious injury.*

**WARNING!**

- Always thaw out batteries before charging them.

*Charging frozen batteries can lead to an explosion which can cause serious injury.*

**CAUTION: Fast charging the batteries is not allowed.**

*The batteries are maintenance-free and the cell plugs cannot be removed.*

## Charging a regular battery system

The battery box can be placed in two positions: beside the chassis or at the rear of the chassis.

### Battery box beside the chassis

Remove the battery box cover.

Connect the positive pole (+) of the battery charger to the positive pole (+) of the battery first and then connect the negative pole (–) to the negative pole (–).

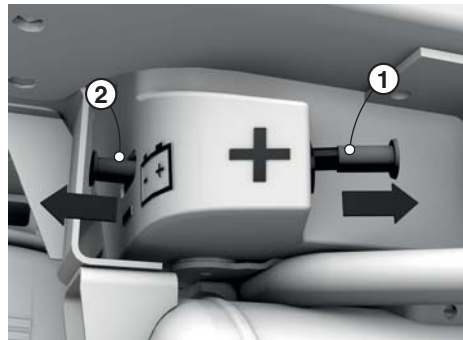
After charging, switch off the battery charger and then disconnect the negative pole (–) first and subsequently the positive pole (+).

### Battery box at the rear of the chassis

Terminals where the battery charger can be connected are found on the lower side of the battery box.

Remove the cover (1) and connect the positive pole (+) of the battery charger to the positive pole (+) first. Then remove the cover (2) of the negative pole (–) and connect the negative pole to the negative pole (–).

After charging, switch off the battery charger and then disconnect the negative pole (–) and subsequently the positive pole (+) and reinstall the covers.



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## 12.16 REPLACING BULBS



### CAUTION:

– If LED lighting is defective, contact the nearest DAF Service dealer.

*You cannot replace defective LED lighting yourself.*

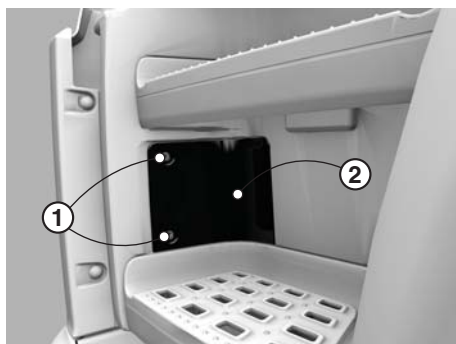
### Halogen main and dipped beam, front fog lights

1. Switch off the lights before replacing bulbs.
2. Open the door.



*NOTE: To replace the front fog lights, remove the lower cover in the stepwell instead of the upper cover.*

3. Remove the attachment bolts (1) in the stepwell.
4. Remove the upper cover (2).



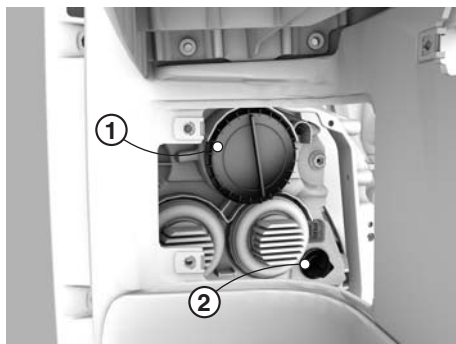
D001829

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5. Remove the rubber cap (D or E).
6. Disconnect the connector from the bulb.
7. Press the lamp fixing bracket downwards and remove the bulb (the marker light can also be replaced).



*NOTE: Only touch the glass of a halogen bulb with a clean, dry cloth.*



D001836-2

8. Fit the new bulb in the reflector so that it drops into the relevant **recess** in the reflector. If the bulb has been fitted correctly it **cannot** turn in the reflector.
9. Press the lamp fixing bracket upwards and make sure that it latches into the recesses correctly.
10. Connect the connector.
11. **Carefully** fit the rubber cap (D or E).
12. Position the upper cover in the stepwell.
13. Install the attachment bolts.

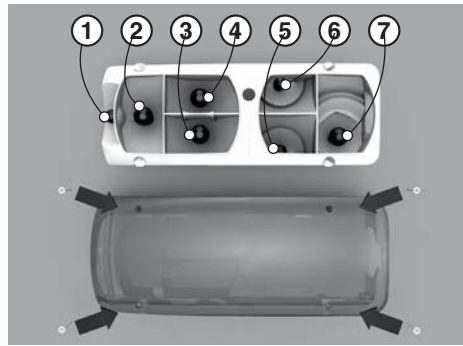
## Direction indicators

1. Remove the upper cover in the stepwell.
2. Rotate the bulb fitting (F) anti-clockwise.
3. Pull the bulb fitting out of the reflector.
4. Replace the bulb.
5. Push the bulb fitting into the reflector and rotate the holder clockwise to secure it.
6. Install the upper cover in the stepwell.

## Rear lights

1. Remove the four screws and remove the lens cap.

- 1 Marker light
- 2 Direction indicator
- 3 Reverse light
- 4 Brake light
- 5 Rear light & licence plate light
- 6 Rear light
- 7 Fog light



D001659

## 12.17 FUSES

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**WARNING!** Replacing a blown fuse with one of a higher rating can result in an overload in an electrical circuit and cause a fire. This can lead to serious injury and damage to the vehicle.

- Never replace a blown fuse with one of a higher rating.
- Always consult the fuse and relay label inside the fuse box for the correct fuse value.
- If a fuse keeps blowing repeatedly, this indicates that the power consumption is too high or that there is a fault in the circuit. A DAF Service dealer must check the electrical circuit as soon as possible.



**CAUTION:** Replacing a fuse without observing the safety procedures can lead to damage to electrical components or vehicle electronics.

- Never replace a fuse while:
  - The ignition is switched on.
  - The engine is running.
  - A consumer is switched on.

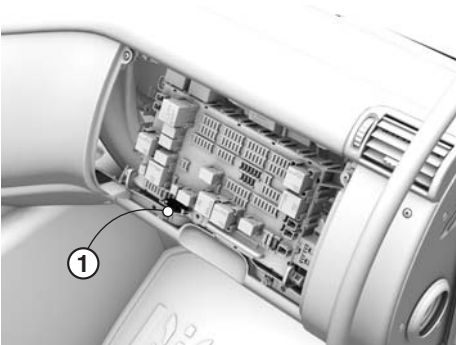
Fuse box

The fuse box, located under a cover on the dashboard in front of the co-driver seat, contains all the usual fuses and relays.

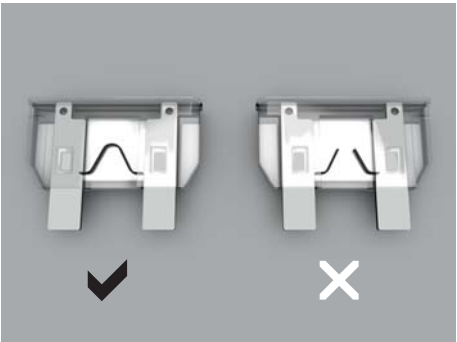
A label fixed to the inside of the cover shows all fuses, relays and test connections. See section 'Symbols label fuse box' in chapter 'Technical data'.

There are three types of fuses used. Mini and ATO blade type fuses and two so-called J-case fuses.

There is a special fuse clamp attached to the lower side of the fuse box, intended for replacing blade type fuses. A DAF Service dealer can replace the J-case fuses.



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Fuse colour-coding

Brown	5 A	mini blade type
Red	10 A	mini blade type
Blue	15 A	mini blade type
Yellow	20 A	mini blade type
Light brown	25 A	mini blade type
Green	30 A	mini blade type
Orange	40 A	ATO blade type



# 13.1 TECHNICAL DATA

## 13.1.1 Engine

### MX-13 engine

Make	DAF
Types	MX300 (X) MX340 (X) MX375 (X)
Emissions standard:	Euro 6
Version	Water-cooled, four-stroke diesel engine with electronically controlled injection system and four valves per cylinder. Turbo-intercooling with Variable Turbo Geometry (VTG).
Number of cylinders	6
Bore x stroke	130 x 162 mm
Swept volume	12.9 litres
Idle engine speed	approximately 550 rpm
Maximum governed engine speed	2200 rpm

### Output and torque

Type	P (kW/hp)	n <sub>p</sub> (rpm)	M (Nm)	n <sub>M</sub> (rpm)
MX300	300/410	1700	2000	1000 - 1410
MX340	340/460	1700	2300	1000 - 1410
MX375	375/510	1700	2500	1000 - 1410

Maximum output	P (kW/hp)
Engine speed at maximum output	n <sub>p</sub> (rpm)
Maximum torque	M (Nm)
Engine speed at maximum torque	n <sub>m</sub> (rpm)

## Lubrication system

	Minimum level	Maximum level	
<b>Standard interval</b>	31 litres	40 litres	_____
<b>Extended interval</b>	39 litres	48 litres	_____

## MX-11 engine

Types	MX210 (X) MX240 (X) MX271 (X) MX291 (X) MX320 (X)
Emissions standard:	Euro 6
Version	Water-cooled, four-stroke diesel engine with electronically controlled injection system, double overhead camshafts and four valves per cylinder. Turbo-intercooling with Variable Turbo Geometry (VTG).
Number of cylinders	6
Bore x stroke	123 x 152 mm
Swept volume	10.8 litres
Idle engine speed	approximately 550 rpm
Maximum governed engine speed	2200 rpm

## Output and torque

Type	P (kW/hp)	n <sub>p</sub> (rpm)	M (Nm)	n <sub>M</sub> (rpm)
MX210	210/290	1700	1200	1000 - 1650
MX240	240/330	1700	1400	1000 - 1650
MX271	271/370	1700	1600	1000 - 1650
MX291	291/400	1450 - 1700	1900	1000 - 1400
MX320	320/440	1450 - 1700	2100	1000 - 1400

Maximum output	P (kW/hp)
Engine speed at maximum output	n <sub>p</sub> (rpm)
Maximum torque	M (Nm)
Engine speed at maximum torque	n <sub>m</sub> (rpm)



## Lubrication system

	Minimum level	Maximum level	
<b>Standard interval</b>	27.5 litres	36.5 litres	_____
<b>Extended interval</b>	27.5 litres	36.5 litres	_____

## Emission Aftertreatment System general

Emission Aftertreatment System

Exhaust Gas Recirculation (EGR).  
Selective Catalyst Reduction (SCR)  
catalyst with urea (AdBlue) dosing system,  
combined with Diesel Particulate Filter  
(DPF)

## 13.1.2 Electrical system

Voltage	24 V
Regular battery system	2 x 12 V
Dual battery system	2 sets of 2 x 12 V

### Bulbs

Dipped beam	halogen bulb H7 70 W
Main beam	halogen bulb H1 70 W
Tail light	spherical bulb 5 W
Rear fog light	spherical bulb 21 W
Reversing light	spherical bulb 21 W
Stop light	spherical bulb 21 W
Direction indicator	spherical bulb 21 W
Marker lights	spherical bulb 5 W
Side marker light	spherical bulb 3 W
Stepwell lighting	spherical bulb 5 W
Marker light	spherical bulb 5 W
Combi-light: fog light	halogen bulb 70 W
Spotlight on roof (XL/XH cabin)	halogen bulb H1 70 W
Spotlight in roof (XC cabin)	halogen bulb H11 70 W
Work lamp, white	halogen bulb H3 70 W
Work lamp, yellow	spherical bulb 35 W
Interior lighting, white	spherical bulb 21 W
Interior lighting, amber	spherical bulb 10 W
Interior lighting, doors, amber	3 W
Interior lighting, centre console, amber	3 W
Bunk light	spherical bulb 10 W

## Ignition key/remote control

- Expected battery lifetime 3 years minimum.
- Battery type: 3 volt Lithium battery (CR2032).

### 13.1.3 Symbols label fuse box

1		13		25		37		49	
2		14		26		38		50	
3		15		27		39		51	
4		16		28		40		52	
5		17		29		41		53	
6		18		30		42		54	
7		19		31		43		55	
8		20		32		44		56	
9		21		33		45		57	
10		22		34		46		58	
11		23		35		47		59	
12		24		36		48		60	

D001485-2

1	Air conditioning system
2	Trailing axle
3	Cargo lift active
4	ECAS manoeuvre level
5	Pre-selection main beam
6	Key
7	Ignition switch accessories
8	Heated air dryer
9	Cabin suspension
10	Refrigerator
11	No-idle heat
12	Electronically controlled multi-axle steering
13	Ignition relay
14	DPF regeneration

15	Transmission automatic mode
16	Retarder
17	Cross-axle differential lock
18	Inter-axle differential lock
19	Advanced emergency brake system
20	Roof hatch
21	ECAS 2 levels / air glide
22	Rotating (overhead warning) light
23	Working light
24	ABS truck
25	ABS trailer
26	Marker lights
27	Truck phone
28	Parking brake
29	Engine
30	Headlight washer
31	Fuel heater
32	On-board diagnostics
33	Interior heating
34	Exterior rear-view mirror heating, vertical type
35	Outlet BBM
36	Radio
37	Window lift, power operated
38	Horn
39	Switches
40	Converter 24V / 12V
41	Body Builder Module
42	Power supply trailer
43	Air processing unit
44	Toll Collect
45	Vehicle Intelligence Centre and/or electrical systems general
46	Engine start (turnover)
47	DAF Instrument Panel
48	Theft protection

49	Tachograph
50	Reverse light
51	Outlet accessories
52	Exterior main rear-view mirror adjustment
53	Tool compartment or service light
54	Electric light controller and/or master light
55	Seat
56	Trailer recognition
57	Outlet cabin 24V
58	Outlet cabin 12V
59	Windscreen wiper
60	Windscreen washer and wiper

### 13.1.4 Wheels



**WARNING!** A wheel that rolls off a vehicle can lead to dangerous situations resulting in serious injury and damage to the vehicle.

- Re-torque the wheel nuts after 100 km, after a wheel change, or if the wheel nuts have been loosened.
- If new wheel studs are fitted, the nuts need additional re-torquing after 500 km.



**NOTE:** If a wheel stud is replaced, check the other wheel studs on the relevant wheel hub, and if necessary replace the other wheel studs. Check the wheel nut of the replaced wheel stud. If in doubt, replace the wheel nut.

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#### Tightening torque:

Wheel nuts for all wheels (except 17.5 inch wheel on non-steered front axle)	700 Nm
Wheel nuts for 17.5 inch wheel on non-steered front axle	320 Nm



**NOTE:** After replacing a wheel, have the wheel nuts torqued to the correct tightening torque by a DAF Service dealer.

### 13.1.5 Tyre pressure table

#### Checking the tyre pressures

Tyre pressures depend on axle load and tyre size.

### Tyre pressure table\*

- Wheel fittings in the table are stated as:
  - S = Single mounting
  - T = Twin mounting
- The tyre pressures shown in the table apply to cold tyres.
- Unnecessary tyre wear is frequently caused by vehicle operation with tyre pressures that do not match the axle load.
- When twin wheels are fitted:
  - inflate both tyres to the same pressure;
  - the tread depth must be practically the same on both tyres.

\* The axle loads and corresponding tyre pressures shown in the table apply to normal operating conditions. In other cases, see the tyre manufacturer's specifications.



*NOTE: A tyre must be replaced by one with at least the same load capacity index.*

# Axle loads 3500 - 7500 kg

Tyre size		Recommended pressure on axle loads. [bar]									Maximum axle load (kg)	Pressure at maximum axle load [bar]
		3500	4000	4500	5000	5500	6000	6500	7000	7500		
11R22.5	S		5.0	5.7	6.5	7.2	8.0				6300	8.5
12R22.5	S				5.6	6.3	7.0	7.7	8.4		7100	8.5
13R22.5	S						6.1	6.7	7.3	7.9	8000	8.5
235/75R17.5	S	5.3	6.3	7.2	8.1						5450	9
275/70R22.5	S		5.3	6.1	6.9	7.7	8.5				6300	9
295/60R22.5	S			5.6	6.4	7.1	7.9	8.7			6700	9
295/80R22.5	S				5.6	6.3	7.0	7.7	8.4		7100	8.5
305/70R22.5	S				6.0	6.7	7.4	8.1	8.9		7100	9
315/60R22.5	S				6.0	6.7	7.4	8.1	8.9		7100	9
315/70R22.5	S					6.2	6.9	7.6	8.3	9.0	7500	9
315/80R22.5	S					5.5	6.1	6.7	7.3	7.9	8000	8.5
355/50R22.5	S				5.6	6.2	6.9	7.6	8.3	9.0	7500	9
375/50R22.5	S							7.0	7.7	8.3	8000	9
385/55R22.5	S							6.1	6.7	7.3	9000	9
385/65R22.5	S							6.1	6.7	7.3	9000	9
12.00R24	S						5.3	5.9	6.4	7.0	8000	7.5

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# Axle loads 8000 - 14000 kg

Tyre size		Recommended pressure on axle loads. [bar]									Maximum axle load (kg)	Pressure at maximum axle load [bar]
		8000	8500	9000	10000	11000	11500	12000	13000	14000		
11R22.5	T	5.5	5.9	6.3	7.1	8.0					11600	8.5
12R22.5	T		5.3	5.7	6.5	7.2	7.6	8.0			12600	8.5
13R22.5	S	8.5									8000	8.5
13R22.5	T			5.3	6.0	6.7	7.1	7.5	8.2		13400	8.5
275/70R22.5	T	5.5	5.9	6.3	7.1	8.0	8.4				11600	8.5
295/60R22.5	T		5.8	6.2	7.1	7.9	8.3	8.7			12300	9
295/80R22.5	T		5.3	5.7	6.5	7.2	7.6	8.0			12600	8.5
305/70R22.5	T		5.3	5.7	6.5	7.2	7.6	8.0			12600	8.5
315/60R22.5	T		5.3	5.7	6.5	7.2	7.6	8.0			12600	8.5
315/70R22.5	T			5.3	6.0	6.7	7.1	7.5	8.2		13400	8.5

Tyre size		Recommended pressure on axle loads. [bar]									Maximum axle load (kg)	Pressure at maximum axle load [bar]
		8000	8500	9000	10000	11000	11500	12000	13000	14000		
315/80R22.5	S	8.5									8000	8.5
315/80R22.5	T			5.0	5.7	6.3	6.7	7.0	7.7		13400	8
375/50R22.5	S	9.0	9.7	10.3							8000	9
385/55R22.5	S	7.8	8.4	9.0							9000	9
385/65R22.5	S	7.8	8.4	9.0							9000	9
12.00R24	S	7.5									8000	7.5
12.00R24	T				4.8	5.4	5.7	6.0	6.5	7.1	14600	7.5

## 13.1.6 Lubricant, coolant and fuel specifications

To comply with the warranty terms and to guarantee the durability of DAF products, the correct lubricants, coolant, AdBlue and fuel must be used and the oil change intervals must be adhered to.

Ask the lubricant and fuel suppliers if their products comply with DAF specifications.

Never use additives to lubricants, coolant and fuel, unless instructed by DAF.

Always follow the safety instructions below and the instructions that are supplied with the product.

### 13 DAF is not liable for damage or problems in the following instances:

- If oil of a lower grade than specified has been used.
- If oil of a different viscosity than specified has been used.
- If the specified oil change interval has been exceeded.
- If fuel, lubricants, AdBlue or coolants have been used which do not meet the requirements specified by DAF.
- If biodiesel has been used.



**WARNING!** *Physical contact with various fluids present in the vehicle will lead to serious injury and/or serious health problems.*

**Avoid physical contact with:**

- **Lubricants.**
- **Coolants.**
- **Fuel.**
- **AdBlue.**
- **Battery acid.**

## **Always follow the instructions below in case of physical contact with lubricants, coolants, fuel and AdBlue.**

- If there is skin contact: remove the substance with paper or a cloth, wash with soap and water.
- Consult a doctor in the event of persistent irritation.
- If there is contact with the eyes: remove the substance with a soft cloth and rinse with water.
- Consult a doctor in the event of persistent irritation.
- If any fluid is swallowed: do NOT induce vomiting. Rinse the mouth, drink two glasses of water and consult a doctor.
- When inhaled: get some fresh air and rest.
- Use in a ventilated area.

## **Always follow the instructions below in case of physical contact with battery acid.**

- If there is skin contact: rinse the skin profusely with plenty of water.
- Consult a doctor in the event of persistent redness or pain. Take off polluted clothing and rinse in water.
- If there is contact with the eyes: rinse with plenty of water for at least 15 minutes and consult a doctor.
- If any fluid is swallowed: do NOT induce vomiting. Rinse the mouth, drink two glasses of water and consult a doctor. When inhaled: get some fresh air, rest and consult a doctor.

## **Always follow the instructions below in case of any AdBlue or battery acid spilled on the vehicle.**

- Flush any spilled AdBlue with plenty of water.
- Flush any spilled battery acid with plenty of water.

13

### **13.1.7 AdBlue**

AdBlue must meet the specifications according to ISO 22241, which is replacing DIN 70070.



***WARNING! AdBlue is a non-toxic fluid. However, physical contact can lead to minor injury.***

- ***Avoid direct contact.***
- ***If there is contact with the skin: take off polluted clothing. Rinse the skin profusely with plenty of water.***
- ***If there is contact with the eyes, rinse for at least 15 minutes with plenty of water and consult a doctor.***
- ***If swallowed: do NOT induce vomiting. Rinse the mouth, drink plenty of water and consult a doctor.***
- ***When inhaled: get some fresh air, rest and consult a doctor.***
- ***Use in a ventilated area.***

#### **Procedure after spilling**

- Rinse with plenty of water.



## Storage instructions

- Protect tanks from freezing.
- Use the original tanks only.
- Store in a cool, dry, well-ventilated area.
- Observe the manufacturer's storage instructions and directions for use.



**CAUTION:** Using incorrect or contaminated AdBlue leads to system malfunctions, OBD warnings and eventually to engine power derate and speed limiting.

## 13.1.8 Engine oil

DAF specifications lists refer to international standards, such as ACEA and API. Viscosity is also subject to specific requirements.



**NOTE:** For topping up engine oil **use the same oil brand, grade and ACEA class** as the oil filled at the last oil change.

Engine type	Oil specification
MX-13 and MX-11 engine, standard service interval	ACEA E9 ..W30 or ACEA E6 ..W30 (less fuel consumption)
	ACEA E9 ..W40 or ACEA E6 ..W40
MX-13 and MX-11 engine, extended service interval	ACEA E6 ..W30 (less fuel consumption)
	ACEA E6 ..W40

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## 13.1.9 Coolant



### **WARNING!**

- If there is contact with the eyes: rinse with plenty of water for at least 15 minutes and consult a doctor.
- Avoid prolonged or repeated contact with the skin. If there is contact with the skin: rinse the skin profusely with plenty of water.
- If swallowed: do not induce vomiting. Rinse the mouth, drink two glasses of water and consult a doctor.

**Coolant fluid is toxic. Physical contact can lead to serious health problems.**



**NOTE:** Coolant is harmful to the environment. Process it as industrial chemical waste after use.

The cooling system must be filled with a ready-mixed coolant containing antifreeze and corrosion-inhibiting additives.

## Coolant identification

A sticker behind the grille states the information on the coolant used.



D001706

## Coolant according to DAF specification 74002

The table below lists the coolants that meet DAF specification 74002. It is not permissible to fill the cooling system with a product other than the ones specified in this overview.

Brand name	Supplier
DAF Xtreme Longlife Coolant	DAF Trucks N.V.
Havoline XLC/Havoline Extended Life Antifreeze Coolant	Chevron/Texaco/Arteco
Caltex Extended Life Coolant	Caltex
Glacelf Auto Supra/Coolelf Auto Supra	Total
G-Energy Antifreeze SNF	Gazpromneft-lubricants Ltd
Maxigel Plus/Ultracooling Plus	Renault Truck Oils
BP Procool	BP
Castrol Antifreeze SF Premix	Castrol
Inugel Optimal/Inugel Optimal Ultra	Motul
Yacco LR Organique	Yacco
Petrol Antifriz Koncentrat	Petrol
Orvema Protex Long Life/Coolmix LL	Orvema
SB-G12	Sotragel
York 718	Ginouves Georges SAS
Coolant Maxmaster Truckcool	Platinum Oil Wielkopolskie Centrum Dys-trybucji

PS Longlife Coolant	Achtel
Maintain Fricofin LL	Fuchs Europe Schmierstoffe GMBH
Coolant concentrate Maxmaster Redcool	Platinum Oil Wielkopolskie Centrum Dys-trybucji
Glysantin G 30-91	BASF
Polar Premium Longlife Antifreeze	Telko
Zero Longlife Antifreeze	Telko
Glidex Extra	PPH Chemia Bomar

## 13.1.10 Diesel fuel



**CAUTION:** *It is prohibited to use biodiesel or biodiesel blends. Fuel additives are not permitted. The use of these fuels leads to system malfunctions, OBD warnings and engine derates.*



**CAUTION:** *For the PACCAR MX-13 and MX-11 engines, only diesel fuels meeting the European standard EN590 may be used. EN590 Diesel may contain up to 7% fatty acid methyl esters (FAME).*

The Euro 6 engine controls and OBD systems are not compatible with the fuel properties of biodiesel (FAME) or biodiesel blends (B30, for example). Other fuel blends require specific calibration and certification. Use of these fuels leads to system malfunctions and OBD warnings. Consequences can include component damage and/or engine derates as a result of the Euro 6 OBD requirements.

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## 13.1.11 Clutch

Hydraulic clutch

DOT 4 brake fluid

## 13.1.12 Steering gear

**Steering box oil**

Hydraulic power steering

DEXRON III with valid approval number.

## 13.1.13 Cabin tilt mechanism

Cabin tilting gear oil must meet MIL-H-5606C.

The following may be used:

ESSO Univis J13  
FINA Hydran B5219B  
TEXACO Aircraft Hydraulic 5606G  
TOTAL Aerohydraulic 520

## 13.1.14 Chassis

### Chassis lubricant

Lubrication grease:

Lithium-based grease, NLGI 0  
EP quality

Automatic lubrication system:

Lithium based EP additive grease, NLGI 0

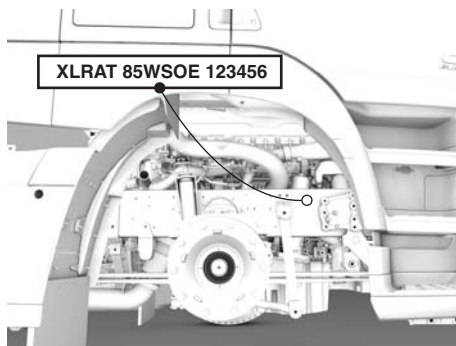
## 13.2 IDENTIFICATION

### 13.2.1 Chassis number

The chassis number (Vehicle Identification Number) is stamped in the right-hand chassis side member between the front axle beam and the rear bracket of the front spring.



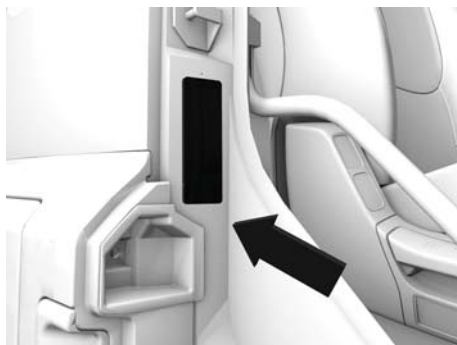
**NOTE:** The chassis number can also be displayed on the master display, see section 'Menu overview' in chapter 'Master display'. It is also present on the vehicle identification plate.



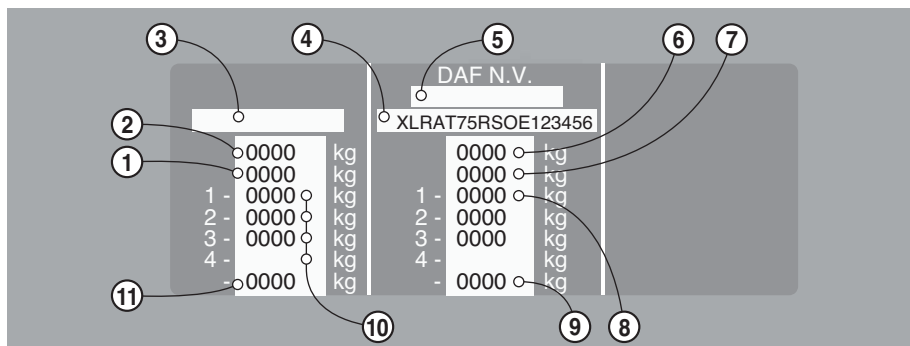
D001844

### 13.2.2 Vehicle identification plate

The vehicle identification plate is attached to the right-hand door pillar.



D001845

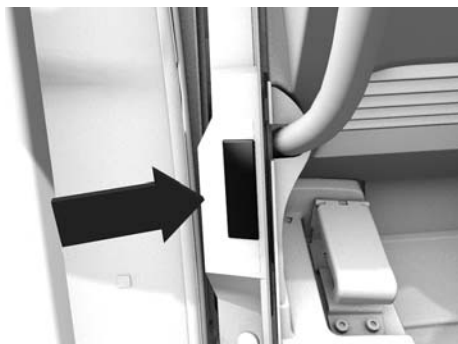


D001718

- |   |  |    |  |
|---|--|----|--|
| 1 | Maximum permissible gross combination weight (GCW) | 7  | Maximum design weight of the combination (GCW)                     |
| 2 | Maximum permissible gross vehicle weight (GVW)     | 8  | Maximum axle design load (listed per axle from front to rear)      |
| 3 | National type approval number                      | 9  | Design weight on the fifth wheel                                   |
| 4 | Vehicle Identification Number (chassis number)     | 10 | Maximum permissible axle load (listed per axle from front to rear) |
| 5 | EC approval number                                 | 11 | Maximum permissible weight on the fifth wheel                      |
| 6 | Maximum design weight of the vehicle (GVW)         |    |  |

## 13.2.3 Paint identification plate

13

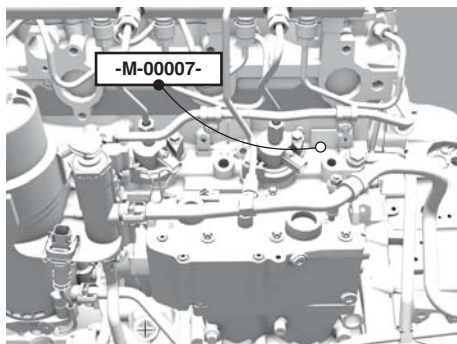


D001850

The paint identification plate is fitted in the cabin on the left-hand door pillar.

## 13.2.4 Engine number

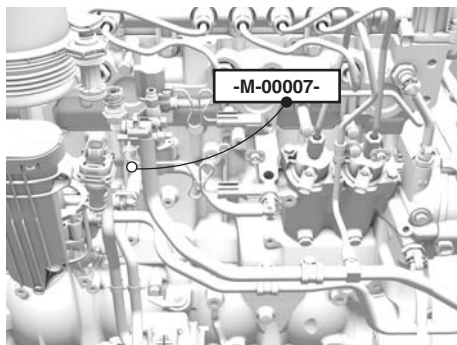
### Location on MX-13 engine



D001720

### Location on MX-11 engine

The engine number is stamped on the engine.



D001975

## 13.2.5 Engine identification plate

The engine identification plate is located on the coolant pump at the front right-hand side of the engine. It states the engine data like engine type and engine number.

ENGINE TYPE			
ENGINE NUMBER			
ORDER NUMBER			
TPT NUMBER			
OUTPUT	kw	GOVERNED SPEED	min <sup>-1</sup>
		SETTING	
		SMOKE LEVEL FREE ACCELERATION	m <sup>-1</sup>
<b>PACCAR</b>		PRODUCED BY DAF EINDHOVEN THE NETHERLANDS	

D001721







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Dimensions:	height	.....	
	length	.....	
	width	.....	
Max. permissible weight:		.....	tonnes
Fuel tank capacity:		.....	litres
AdBlue tank capacity:		.....	litres
Key numbers:	fuel tank	.....	
	ignition switch	.....	
	door	.....	

Shaft	Tyre size	At minimum axle load	At maximum axle load
1 <sup>st</sup> axle			
2 <sup>nd</sup> axle			
3 <sup>rd</sup> axle			
4 <sup>th</sup> axle			
5 <sup>th</sup> axle			

**DAF**

